

APPENDIX A BASELINE AND PREDICTED DATA

Appendix A-1: Predicted Project Case Concentrations of Criteria Air Contaminants at Human Health Receptor Locations in the Local Study Area
(in µg/m³)

X	Y	Description	24h TSP	Annual TSP	24h PM ₁₀	24h PM _{2.5}	Annual PM _{2.5}	1h NO ₂	Annual NO ₂	1h SO ₂	Annual SO ₂	30d Dustfall*
Residential Locations												
625731	6062745	Telkwa Elementary	1.18	0.167	0.885	0.251	0.0313	50.6	0.255	0.0287	0.000856	0.00214
625732	6062821	The Ark Playday Center	1.12	0.157	0.866	0.242	0.0294	50.3	0.243	0.0282	0.000813	0.00187
624899	6061799	Tot Spot Family Day Care	1.62	0.245	1.27	0.355	0.0424	58.6	0.335	0.0384	0.00112	0.00284
621359	6055187	Residence	14.0	1.46	10.4	1.61	0.164	83.9	1.50	0.206	0.00508	0.0445
621347	6057296	Residence	10.1	1.40	7.13	1.39	0.155	83.1	1.36	0.238	0.00447	0.0168
621148	6057784	Residence	5.62	0.894	4.39	0.989	0.113	72.4	1.02	0.160	0.00333	0.0111
621219	6057843	Residence	5.72	0.880	4.39	0.953	0.110	72.3	1.00	0.167	0.00326	0.0105
621246	6057883	Residence	5.67	0.865	4.32	0.935	0.108	72.3	0.986	0.168	0.00320	0.0102
621260	6058012	Residence	5.38	0.798	4.14	0.897	0.101	72.9	0.926	0.153	0.00301	0.00929
621151	6058015	Residence	5.23	0.781	4.19	0.923	0.100	74.5	0.917	0.141	0.00297	0.00941
621236	6058089	Residence	5.22	0.759	4.08	0.883	0.0974	73.7	0.892	0.137	0.00289	0.00888
621248	6058191	Residence	5.05	0.716	3.97	0.854	0.0927	73.8	0.852	0.135	0.00276	0.00834
621330	6058317	Residence	4.90	0.676	3.78	0.806	0.0881	72.3	0.811	0.125	0.00263	0.00772
624495	6057858	Residence	5.86	0.959	3.68	0.925	0.103	85.2	0.797	0.110	0.00266	0.0112
624887	6057904	Residence	5.92	0.873	4.06	1.10	0.0924	81.7	0.716	0.0839	0.00240	0.0100
624310	6058125	Residence	5.86	0.842	3.97	0.846	0.0936	83.1	0.749	0.153	0.00248	0.0102
624317	6058312	Residence	5.45	0.740	3.98	0.858	0.0841	78.0	0.688	0.162	0.00226	0.00880
624301	6058433	Residence	5.22	0.687	3.95	0.855	0.0789	76.7	0.654	0.163	0.00215	0.00821
624413	6058467	Residence	5.01	0.666	3.79	0.825	0.0771	77.3	0.638	0.154	0.00210	0.00804
624542	6058470	Residence	4.85	0.660	3.63	0.796	0.0768	77.7	0.630	0.143	0.00208	0.00824
624516	6058298	Residence	5.14	0.735	3.70	0.805	0.0839	78.4	0.678	0.144	0.00224	0.00899
624666	6058350	Residence	4.92	0.714	3.53	0.790	0.0817	77.3	0.657	0.131	0.00218	0.00911
624709	6058331	Residence	4.95	0.726	3.52	0.820	0.0826	76.7	0.661	0.126	0.00219	0.00930
624755	6058337	Residence	4.95	0.730	3.51	0.839	0.0828	76.0	0.660	0.122	0.00219	0.00940
624833	6058269	Residence	5.11	0.774	3.52	0.917	0.0861	78.3	0.677	0.112	0.00226	0.00978
624946	6058333	Residence	5.07	0.762	3.47	0.939	0.0855	79.5	0.668	0.104	0.00224	0.00952
625055	6058312	Residence	5.32	0.781	3.63	1.00	0.0877	81.5	0.677	0.0941	0.00228	0.00930
625125	6058347	Residence	5.28	0.768	3.65	1.01	0.0881	82.4	0.676	0.0895	0.00228	0.00888
625140	6058498	Residence	4.78	0.730	3.33	0.924	0.0866	81.3	0.664	0.0902	0.00224	0.00864
625012	6058547	Residence	4.63	0.694	3.28	0.839	0.0819	79.3	0.640	0.100	0.00214	0.00877
624917	6058542	Residence	4.63	0.673	3.30	0.801	0.0792	77.3	0.628	0.108	0.00209	0.00870
624848	6058478	Residence	4.74	0.684	3.38	0.807	0.0794	76.2	0.633	0.115	0.00211	0.00891
624738	6058471	Residence	4.73	0.669	3.42	0.762	0.0778	76.4	0.628	0.125	0.00208	0.00871
624533	6058522	Residence	4.78	0.639	3.61	0.791	0.0748	77.0	0.618	0.143	0.00203	0.00802
624511	6059467	Residence	2.99	0.444	2.27	0.494	0.0599	67.2	0.504	0.0554	0.00165	0.00523
624728	6060340	Residence	1.95	0.296	1.65	0.406	0.0478	66.3	0.404	0.0361	0.00133	0.00374
624551	6060520	Residence	2.09	0.296	1.77	0.444	0.0483	66.2	0.406	0.0395	0.00134	0.00369
624633	6060666	Residence	1.80	0.266	1.56	0.387	0.0435	62.0	0.372	0.0390	0.00122	0.00350

**Appendix A-1: Predicted Project Case Concentrations of Criteria Air Contaminants at Human Health Receptor Locations in the Local Study Area
(in µg/m³)**

X	Y	Description	24h TSP	Annual TSP	24h PM ₁₀	24h PM _{2.5}	Annual PM _{2.5}	1h NO ₂	Annual NO ₂	1h SO ₂	Annual SO ₂	30d Dustfall*
624707	6060548	Residence	1.77	0.270	1.54	0.379	0.0440	63.0	0.377	0.0372	0.00124	0.00357
624750	6060645	Residence	1.64	0.254	1.42	0.345	0.0415	62.3	0.358	0.0369	0.00117	0.00349
624811	6060513	Residence	1.69	0.261	1.47	0.353	0.0424	62.5	0.366	0.0355	0.00120	0.00357
624835	6060701	Residence	1.60	0.241	1.38	0.333	0.0391	62.3	0.341	0.0358	0.00111	0.00346
625027	6060650	Residence	1.59	0.231	1.38	0.317	0.0370	61.7	0.325	0.0327	0.00106	0.00353
624985	6060414	Residence	1.71	0.253	1.49	0.344	0.0407	62.8	0.354	0.0331	0.00116	0.00360
625166	6060570	Residence	1.60	0.228	1.39	0.311	0.0362	61.2	0.320	0.0310	0.00104	0.00361
625110	6060346	Residence	1.71	0.247	1.50	0.337	0.0395	62.8	0.346	0.0319	0.00113	0.00362
625293	6060420	Residence	1.64	0.230	1.43	0.312	0.0363	61.1	0.321	0.0302	0.00105	0.00366
625211	6060248	Residence	1.73	0.247	1.53	0.335	0.0393	63.1	0.345	0.0314	0.00113	0.00364
625238	6060113	Residence	1.82	0.259	1.60	0.350	0.0410	64.2	0.358	0.0321	0.00117	0.00369
625493	6060254	Residence	1.70	0.231	1.49	0.325	0.0362	60.6	0.320	0.0293	0.00104	0.00373
625561	6060138	Residence	1.76	0.235	1.54	0.338	0.0367	60.8	0.324	0.0293	0.00105	0.00375
625808	6060035	Residence	1.80	0.235	1.56	0.344	0.0364	62.7	0.318	0.0296	0.00104	0.00396
629422	6059314	Residence	1.91	0.207	1.34	0.335	0.0342	49.8	0.309	0.0938	0.00107	0.00275
629376	6059417	Residence	1.65	0.178	1.28	0.316	0.0295	48.3	0.262	0.0611	0.000890	0.00258
629311	6059475	Residence	1.63	0.173	1.27	0.312	0.0288	48.0	0.253	0.0511	0.000855	0.00260
629162	6059498	Residence	1.76	0.195	1.32	0.328	0.0322	50.0	0.279	0.0657	0.000951	0.00276
628542	6058933	Residence	21.0	4.36	10.9	1.98	0.438	68.1	2.16	0.112	0.00795	0.0577
628318	6058826	Residence	9.68	2.50	5.28	1.40	0.249	70.6	1.27	0.0940	0.00460	0.0273
628475	6058809	Residence	16.3	3.97	7.96	1.53	0.380	69.2	1.71	0.101	0.00626	0.0490
628469	6058607	Residence	10.4	2.69	5.85	1.46	0.254	68.0	1.27	0.116	0.00460	0.0291
630293	6058896	Residence	1.97	0.196	1.59	0.437	0.0333	57.3	0.297	0.0563	0.00103	0.00297
630568	6058612	Residence	2.83	0.292	2.31	0.649	0.0449	60.3	0.365	0.0536	0.00128	0.00597
630843	6058516	Residence	2.11	0.216	1.73	0.493	0.0337	57.5	0.273	0.0411	0.000945	0.00539
630943	6058355	Residence	2.30	0.253	1.82	0.531	0.0374	57.4	0.277	0.0419	0.000960	0.00701
630925	6057608	Residence	3.62	0.316	3.10	0.959	0.0495	63.7	0.328	0.0763	0.00115	0.00948
631013	6057550	Residence	3.34	0.297	2.92	0.912	0.0482	63.1	0.323	0.0763	0.00113	0.00818
630907	6057496	Residence	3.59	0.302	3.15	0.977	0.0480	63.9	0.323	0.0798	0.00112	0.00893
630457	6057731	Residence	4.23	0.419	3.17	0.858	0.0507	61.5	0.327	0.0503	0.00113	0.0258
630474	6057528	Residence	3.54	0.328	2.80	0.779	0.0423	61.5	0.288	0.0469	0.000990	0.0199
621045	6057791	Residence	5.50	0.862	4.42	1.01	0.110	73.2	1.01	0.140	0.00327	0.0111
621147	6057863	Residence	5.47	0.854	4.33	0.967	0.108	73.0	0.985	0.149	0.00320	0.0105
621311	6058287	Residence	4.94	0.684	3.83	0.816	0.0891	72.7	0.820	0.127	0.00266	0.00785
624652	6058012	Residence	5.47	0.884	3.64	0.950	0.0954	80.9	0.745	0.111	0.00249	0.0106
624618	6058496	Residence	4.77	0.650	3.53	0.777	0.0760	77.2	0.622	0.136	0.00205	0.00830
624949	6060663	Residence	1.60	0.235	1.38	0.323	0.0379	62.0	0.332	0.0338	0.00108	0.00350
630914	6058404	Residence	2.24	0.243	1.79	0.520	0.0364	57.5	0.276	0.0420	0.000957	0.00658
630879	6058459	Residence	2.18	0.230	1.77	0.508	0.0352	57.5	0.275	0.0418	0.000953	0.00604

**Appendix A-1: Predicted Project Case Concentrations of Criteria Air Contaminants at Human Health Receptor Locations in the Local Study Area
(in $\mu\text{g}/\text{m}^3$)**

X	Y	Description	24h TSP	Annual TSP	24h PM_{10}	24h $\text{PM}_{2.5}$	Annual $\text{PM}_{2.5}$	1h NO_2	Annual NO_2	1h SO_2	Annual SO_2	30d Dustfall*
629378	6058797	Residence	10.7	1.55	6.37	2.20	0.423	81.0	7.93	0.966	0.0295	0.0126
629404	6059357	Residence	1.76	0.193	1.31	0.326	0.0319	49.1	0.285	0.0771	0.000977	0.00266
626743	6062021	Cabin	1.09	0.137	0.954	0.242	0.0250	47.9	0.220	0.0328	0.000728	0.00194
620350	6055101	Horsemen Camp	39.0	5.21	25.0	4.30	0.492	97.3	5.24	0.487	0.0190	0.118

Notes:

TSP = Total suspended particulates

PM_{10} / $\text{PM}_{2.5}$ = Particulate matter equal to or less than 2.5/10 micrometer in diameter

h = hour

d = day

NO_2 = Nitrogen dioxide

SO_2 = Sulfur dioxide

** The unit for dustfall is $\text{mg}/\text{dm}^2\text{-day}$*

Appendix A-2: Annual Average Metals in Project Case (Operations) in Air (µg/m³)

X	Y	Description	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn
620350	6055101	Horsemen Camp	0.0399	0.0000445	0.0000000019	0.0000304	0.00146	0.000000230	0.163	0.00000698	0.0000291	0.000117	0.000285	0.0719	0.00000895	0.0000201	0.00280	0.0000550	0.0148	0.00150
625731	6062745	Telkwa Elementary	0.00189	0.00000149	0.000000000078	0.00000153	0.0000279	0.0000000097	0.00944	0.000000221	0.00000120	0.00000411	0.00000464	0.00291	0.000000367	0.000000807	0.000121	0.00000196	0.000579	0.0000621
625732	6062821	The Ark Playday Center	0.00179	0.00000144	0.000000000075	0.00000144	0.0000264	0.0000000092	0.00883	0.000000211	0.00000114	0.00000390	0.00000440	0.00277	0.000000350	0.000000793	0.000115	0.00000186	0.000551	0.0000592
624899	6061799	Tot Spot Family Day Care	0.00265	0.00000211	0.00000000011	0.00000213	0.0000401	0.0000000140	0.0126	0.000000297	0.00000171	0.00000592	0.00000669	0.00419	0.000000529	0.00000108	0.000175	0.00000263	0.000840	0.0000900
621359	6055187	Residence	0.0151	0.0000154	0.00000000061	0.0000123	0.000211	0.0000000771	0.0807	0.00000162	0.0000101	0.0000297	0.0000352	0.0220	0.00000271	0.0000104	0.000896	0.0000124	0.00428	0.000472
621347	6057296	Residence	0.0128	0.0000133	0.00000000065	0.00000960	0.000220	0.0000000765	0.0492	0.00000147	0.00000926	0.0000313	0.0000380	0.0223	0.00000282	0.00000651	0.000917	0.0000116	0.00450	0.000489
621148	6057784	Residence	0.00896	0.00000976	0.00000000045	0.00000683	0.000150	0.0000000520	0.0371	0.00000109	0.00000645	0.0000212	0.0000259	0.0151	0.00000191	0.00000501	0.000618	0.00000835	0.00302	0.000329
621219	6057843	Residence	0.00878	0.00000950	0.00000000044	0.00000668	0.000147	0.0000000510	0.0362	0.00000106	0.00000632	0.0000208	0.0000253	0.0148	0.00000187	0.00000488	0.000607	0.00000818	0.00297	0.000324
621246	6057883	Residence	0.00862	0.00000931	0.00000000043	0.00000656	0.000144	0.0000000502	0.0355	0.00000104	0.00000620	0.0000204	0.0000249	0.0145	0.00000184	0.00000479	0.000596	0.00000804	0.00292	0.000318
621260	6058012	Residence	0.00803	0.00000867	0.00000000040	0.00000612	0.000134	0.0000000466	0.0333	0.000000974	0.00000577	0.0000189	0.0000230	0.0135	0.00000171	0.00000450	0.000554	0.00000751	0.00271	0.000295
621151	6058015	Residence	0.00792	0.00000860	0.00000000040	0.00000604	0.000131	0.0000000458	0.0331	0.000000965	0.00000569	0.0000186	0.0000227	0.0133	0.00000168	0.00000448	0.000544	0.00000741	0.00266	0.000290
621236	6058089	Residence	0.00769	0.00000832	0.00000000039	0.00000587	0.000127	0.0000000445	0.0321	0.000000935	0.00000552	0.0000181	0.0000220	0.0129	0.00000163	0.00000434	0.000529	0.00000720	0.00258	0.000282
621248	6058191	Residence	0.00730	0.00000789	0.00000000037	0.00000557	0.000121	0.0000000422	0.0306	0.000000889	0.00000524	0.0000171	0.0000208	0.0122	0.00000154	0.00000415	0.000500	0.00000685	0.00244	0.000267
621330	6058317	Residence	0.00692	0.00000745	0.00000000035	0.00000528	0.000114	0.0000000400	0.0290	0.000000841	0.00000496	0.0000162	0.0000196	0.0116	0.00000146	0.00000395	0.000474	0.00000650	0.00231	0.000253
624495	6057858	Residence	0.00772	0.00000579	0.00000000039	0.00000540	0.000135	0.0000000514	0.0203	0.000000708	0.00000556	0.0000211	0.0000231	0.0152	0.00000194	0.00000263	0.000630	0.00000712	0.00312	0.000336
624887	6057904	Residence	0.00698	0.00000521	0.00000000035	0.00000489	0.000122	0.0000000464	0.0185	0.000000637	0.00000502	0.0000190	0.0000207	0.0137	0.00000175	0.00000238	0.000568	0.00000642	0.00281	0.000303
624310	6058125	Residence	0.00709	0.00000559	0.00000000036	0.00000502	0.000123	0.0000000465	0.0200	0.000000676	0.00000511	0.0000190	0.0000210	0.0137	0.00000175	0.00000264	0.000567	0.00000656	0.00280	0.000302
624317	6058312	Residence	0.00641	0.00000522	0.00000000032	0.00000457	0.000110	0.0000000415	0.0191	0.000000627	0.00000461	0.0000169	0.0000188	0.0122	0.00000155	0.00000254	0.000504	0.00000594	0.00249	0.000269
624301	6058433	Residence	0.00604	0.00000503	0.00000000030	0.00000434	0.000103	0.0000000388	0.0186	0.000000601	0.00000434	0.0000158	0.0000176	0.0114	0.00000145	0.00000249	0.000470	0.00000561	0.00232	0.000251
624413	6058467	Residence	0.00588	0.00000487	0.00000000029	0.00000422	0.000101	0.0000000378	0.0180	0.000000584	0.00000423	0.0000154	0.0000171	0.0111	0.00000141	0.00000241	0.000459	0.00000547	0.00226	0.000244
624542	6058470	Residence	0.00582	0.00000476	0.00000000029	0.00000416	0.0000996	0.0000000375	0.0175	0.000000573	0.00000418	0.0000153	0.0000170	0.0110	0.00000141	0.00000234	0.000456	0.00000542	0.00225	0.000243
624516	6058298	Residence	0.00633	0.00000506	0.00000000032	0.00000450	0.000109	0.0000000412	0.0184	0.000000612	0.00000455	0.0000169	0.0000186	0.0121	0.00000155	0.00000243	0.000502	0.00000588	0.00248	0.000268
624666	6058350	Residence	0.00614	0.00000487	0.00000000031	0.00000435	0.000106	0.0000000401	0.0176	0.000000591	0.00000442	0.0000164	0.0000181	0.0118	0.00000151	0.00000233	0.000488	0.00000571	0.00241	0.000260
624709	6058331	Residence	0.00620	0.00000488	0.00000000031	0.00000439	0.000107	0.0000000406	0.0176	0.000000593	0.00000446	0.0000166	0.0000183	0.0119	0.00000153	0.00000231	0.000495	0.00000577	0.00244	0.000264
624755	6058337	Residence	0.00620	0.00000486	0.00000000031	0.00000438	0.000108	0.0000000407	0.0174	0.000000592	0.00000447	0.0000167	0.0000183	0.0120	0.00000153	0.00000229	0.000497	0.00000577	0.00245	0.000265
624833	6058269	Residence	0.00644	0.00000494	0.00000000032	0.00000453	0.000112	0.0000000426	0.0175	0.000000604	0.00000464	0.0000175	0.0000191	0.0125	0.00000160	0.00000228	0.000520	0.00000598	0.00257	0.000277
624946	6058333	Residence	0.00635	0.00000484	0.00000000032	0.00000446	0.000111	0.0000000422	0.0170	0.000000594	0.00000458	0.0000173	0.0000190	0.0124	0.00000159	0.00000220	0.000516	0.00000591	0.00255	0.000275
625055	6058312	Residence	0.00648	0.00000485	0.00000000033	0.00000452	0.000114	0.0000000433	0.0168	0.000000599	0.00000468	0.0000178	0.0000194	0.0128	0.00000164	0.00000216	0.000531	0.00000603	0.00263	0.000283
625125	6058347	Residence	0.00645	0.00000480	0.00000000033	0.00000450	0.000114	0.0000000432	0.0166	0.000000596	0.00000466	0.0000178	0.0000194	0.0127	0.00000163	0.00000211	0.000530	0.00000603	0.00262	0.000282
625140	6058498	Residence	0.00627	0.00000468	0.00000000032	0.00000437	0.000111	0.0000000420	0.0161	0.000000584	0.00000453	0.0000173	0.0000189	0.0124	0.00000159	0.00000205	0.000516	0.00000589	0.00255	0.000275
625012	6058547	Residence	0.00600	0.00000459	0.00000000030	0.00000421	0.000105	0.0000000398	0.0161	0.000000568	0.00000433	0.0000164	0.0000179	0.0117	0.00000150	0.00000209	0.000487	0.00000563	0.00241	0.000259
624917	6058542	Residence	0.00585	0.00000457	0.00000000029	0.00000413	0.000102	0.0000000385	0.0163	0.000000560	0.00000422	0.0000158	0.0000174	0.0113	0.00000145	0.00000213	0.000470	0.00000548	0.00232	0.000251
624848	6058478	Residence	0.00591	0.00000464	0.00000000030	0.00000418	0.000103	0.0000000388	0.0167	0.000000567	0.00000426	0.0000159	0.0000175	0.0114	0.00000146	0.00000218	0.000473	0.00000552	0.00234	0.000252
624738	6058471	Residence	0.00583	0.00000466	0.00000000029	0.00000415	0.000101	0.0000000380	0.0169	0.000000566	0.00000420	0.0000155	0.0000172	0.0112	0.00000143	0.00000224	0.000463	0.00000544	0.00228	0.000247
624533	6058522	Residence	0.00568	0.00000469	0.00000000028	0.00000407	0.0000971	0.0000000365	0.0173	0.000000563	0.00000408	0.0000149	0.0000166	0.0107	0.00000137	0.00000232	0.000443	0.00000529	0.00218	0.000236
624511	6059467	Residence	0.00439	0.00000377	0.00000000022	0.00000318	0.0000743	0.0000000277	0.0142	0.000000459	0.00000315	0.0000113	0.0000127	0.00811	0.00000104	0.00000189	0.000336	0.00000418	0.00165	0.000179
624728	6060340	Residence	0.00329	0.00000287	0.00000000016	0.00000243	0.0000543	0.0000000202	0.0117	0.000000360	0.00000233	0.00000825	0.00000924	0.00590	0.000000754	0.00000150	0.000244	0.00000322	0.00120	0.000130
624551	6060520	Residence	0.00331	0.00000290	0.00000000016	0.00000244	0.0000548	0.0000000203	0.0117	0.000000364	0.00000234	0.00000830	0.00000933	0.00594	0.000000758	0.00000148	0.000246	0.00000324	0.00120	0.000130
624633	6060666	Residence	0.00300	0.00000268	0.00000000015	0.00000224	0.0000487	0.0000000179	0.0113	0.000000335	0.00000211	0.00000733	0.00000827	0.00525	0.000000669	0.00000142	0.000217	0.00000293	0.00106	0.000115
624707	6060548	Residence	0.00304	0.00000270	0.00000000015	0.00000227	0.0000494	0.0000000183	0.0114	0.000000338	0.00000214	0.00000745	0.00000839	0.00534	0.000000681	0.00000144	0.000221	0.00000297	0.00108	0.000117
624750	6060645	Residence	0.00287	0.00000258	0.00000000014	0.00000216	0.0000461	0.0000000170	0.0112	0.000000322	0.00000201	0.00000693	0.00000782	0.00497	0.000000632	0.00000140	0.000205	0.00000280	0.00100	0.000109
624811	6060513	Residence	0.00294	0.00000262	0.00000000014	0.00000221	0.0000474	0.0000000175	0.0113	0.000000328	0.00000206	0.00000715	0.00000805	0.00512	0.000000653	0.00000142	0.000212	0.00000287	0.00103	0.000112
624835	6060701	Residence	0.00273																	

Appendix A-2: Annual Average Metals in Project Case (Operations) in Air (µg/m³)

X	Y	Description	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn
629162	6059498	Residence	0.00200	0.00000146	0.000000000080	0.00000163	0.0000294	0.0000000102	0.0101	0.000000247	0.00000125	0.00000437	0.00000487	0.00307	0.000000391	0.000000833	0.000128	0.00000227	0.000612	0.0000655
628542	6058933	Residence	0.0296	0.0000117	0.00000000067	0.0000284	0.000364	0.0000000943	0.222	0.00000225	0.0000133	0.0000491	0.0000559	0.0337	0.00000389	0.00000160	0.00147	0.0000229	0.00661	0.000648
628318	6058826	Residence	0.0176	0.00000793	0.00000000056	0.0000151	0.000254	0.0000000793	0.0970	0.00000125	0.00000946	0.0000371	0.0000408	0.0260	0.00000315	0.00000134	0.00111	0.0000136	0.00526	0.000537
628475	6058809	Residence	0.0269	0.0000112	0.00000000073	0.0000246	0.000357	0.000000103	0.176	0.00000174	0.0000132	0.0000501	0.0000559	0.0350	0.00000412	0.00000147	0.00151	0.0000187	0.00700	0.000701
628469	6058607	Residence	0.0184	0.00000844	0.00000000063	0.0000153	0.000276	0.0000000892	0.0922	0.00000124	0.0000103	0.0000409	0.0000448	0.0288	0.00000352	0.00000134	0.00123	0.0000140	0.00587	0.000604
630293	6058896	Residence	0.00196	0.00000138	0.000000000080	0.00000156	0.0000302	0.0000000105	0.00909	0.000000266	0.00000126	0.00000456	0.00000506	0.00316	0.000000410	0.000000754	0.000132	0.00000250	0.000636	0.0000679
630568	6058612	Residence	0.00263	0.00000163	0.000000000097	0.00000218	0.0000393	0.0000000129	0.0136	0.000000335	0.00000158	0.00000584	0.00000651	0.00402	0.000000515	0.000000764	0.000170	0.00000320	0.000806	0.0000849
630843	6058516	Residence	0.00205	0.00000136	0.000000000078	0.00000169	0.0000300	0.0000000102	0.0105	0.000000245	0.00000124	0.00000446	0.00000496	0.00312	0.000000396	0.000000712	0.000131	0.00000231	0.000623	0.0000660
630943	6058355	Residence	0.00231	0.00000145	0.000000000083	0.00000195	0.0000328	0.0000000109	0.0127	0.000000249	0.00000135	0.00000481	0.00000535	0.00338	0.000000422	0.000000713	0.000142	0.00000236	0.000673	0.0000708
630925	6057608	Residence	0.00300	0.00000182	0.000000000012	0.00000243	0.0000450	0.0000000154	0.0143	0.000000286	0.00000182	0.00000676	0.00000740	0.00477	0.000000598	0.000000776	0.000201	0.00000284	0.000964	0.000102
631013	6057550	Residence	0.00287	0.00000175	0.000000000011	0.00000234	0.0000429	0.0000000147	0.0140	0.000000281	0.00000174	0.00000643	0.00000705	0.00454	0.000000569	0.000000768	0.000191	0.00000277	0.000915	0.0000964
630907	6057496	Residence	0.00291	0.00000179	0.000000000011	0.00000234	0.0000440	0.0000000153	0.0135	0.000000279	0.00000178	0.00000664	0.00000725	0.00469	0.000000590	0.000000784	0.000197	0.00000278	0.000949	0.000100
630457	6057731	Residence	0.00354	0.00000213	0.000000000014	0.00000278	0.0000553	0.0000000196	0.0149	0.000000292	0.00000222	0.00000842	0.00000915	0.00600	0.000000751	0.000000832	0.000253	0.00000303	0.00122	0.000129
630474	6057528	Residence	0.00291	0.00000186	0.000000000012	0.00000229	0.0000447	0.0000000160	0.0126	0.000000255	0.00000183	0.00000680	0.00000739	0.00486	0.000000609	0.000000834	0.000204	0.00000256	0.000985	0.000104
626743	6062021	Cabin	0.00158	0.00000133	0.000000000069	0.00000126	0.0000234	0.0000000084	0.00754	0.000000189	0.00000104	0.00000348	0.00000391	0.00249	0.000000316	0.000000795	0.000103	0.00000165	0.000495	0.0000537
629907	6057772	TC-001-PS	0.0278	0.0000142	0.00000000014	0.0000181	0.000539	0.0000000204	0.0366	0.00000162	0.0000201	0.0000866	0.0000920	0.0617	0.00000789	0.00000125	0.00259	0.0000221	0.0130	0.00137
615812	6051368	TC-004	0.00927	0.00000683	0.000000000041	0.00000708	0.000115	0.0000000530	0.0423	0.00000106	0.00000620	0.0000188	0.0000184	0.0145	0.00000186	0.00000795	0.000587	0.0000105	0.00281	0.000318
615475	6051133	TC-005	0.00813	0.00000602	0.000000000036	0.00000623	0.0001000	0.0000000462	0.0375	0.000000925	0.00000543	0.0000163	0.0000161	0.0126	0.00000162	0.00000703	0.000511	0.00000908	0.00244	0.000277
615717	6050855	TC-006	0.00587	0.00000450	0.000000000026	0.00000452	0.0000722	0.0000000331	0.0276	0.000000658	0.00000392	0.0000117	0.0000117	0.00900	0.00000115	0.00000511	0.000364	0.00000635	0.00174	0.000198
616577	6050085	TC-007	0.00260	0.00000224	0.000000000011	0.00000203	0.0000328	0.0000000143	0.0127	0.000000289	0.00000175	0.00000508	0.00000534	0.00391	0.000000494	0.00000225	0.000158	0.00000260	0.000754	0.0000855
616170	6050352	TC-008	0.00321	0.00000266	0.000000000014	0.00000249	0.0000400	0.0000000177	0.0156	0.000000355	0.00000215	0.00000626	0.00000649	0.00483	0.000000612	0.00000280	0.000195	0.00000327	0.000932	0.000106
616083	6051054	TC-009	0.00569	0.00000443	0.000000000024	0.00000439	0.0000703	0.0000000320	0.0269	0.000000636	0.00000380	0.0000113	0.0000114	0.00870	0.00000111	0.00000496	0.000352	0.00000608	0.00168	0.000191
616390	6051025	TC-010	0.00492	0.00000393	0.000000000020	0.00000382	0.0000606	0.0000000273	0.0238	0.000000535	0.00000327	0.00000956	0.00000979	0.00741	0.000000941	0.00000436	0.000300	0.00000504	0.00143	0.000162
618810	6053186	TC-012	0.143	0.000118	0.00000000055	0.000115	0.00160	0.000000749	0.784	0.00000987	0.0000920	0.000237	0.000252	0.198	0.0000239	0.000144	0.00790	0.0000915	0.0374	0.00429
630203	6058465	TC-013	0.00906	0.00000405	0.000000000025	0.00000829	0.000117	0.0000000341	0.0604	0.000000604	0.00000444	0.0000164	0.0000183	0.0115	0.00000135	0.000000906	0.000497	0.00000629	0.00229	0.000231
616080	6052375	TC-028	0.0543	0.0000352	0.000000000029	0.0000395	0.000712	0.0000000337	0.198	0.00000717	0.0000374	0.000127	0.000115	0.0940	0.0000125	0.00000382	0.00387	0.0000741	0.0187	0.00209
617192	6049954	TC-029	0.00249	0.00000219	0.000000000011	0.00000195	0.0000315	0.0000000136	0.0123	0.000000275	0.00000168	0.00000485	0.00000514	0.00373	0.000000471	0.00000215	0.000151	0.00000244	0.000720	0.0000816
618297	6050163	TC-030	0.00325	0.00000285	0.000000000013	0.00000254	0.0000406	0.0000000177	0.0162	0.000000345	0.00000218	0.00000625	0.00000661	0.00483	0.000000608	0.00000283	0.000195	0.00000307	0.000932	0.000106
617975	6049914	TC-031	0.00267	0.00000237	0.000000000011	0.00000209	0.0000336	0.0000000146	0.0132	0.000000290	0.00000179	0.00000517	0.00000549	0.00398	0.000000501	0.00000231	0.000161	0.00000256	0.000769	0.0000871
618854	6049902	TC-032	0.00299	0.00000265	0.000000000012	0.00000235	0.0000375	0.0000000163	0.0149	0.000000318	0.00000200	0.00000574	0.00000610	0.00444	0.000000557	0.00000260	0.000179	0.00000280	0.000856	0.0000970
616455	6052608	TC-034	0.102	0.0000645	0.00000000050	0.0000748	0.00130	0.000000621	0.391	0.0000124	0.0000690	0.000230	0.000209	0.172	0.0000227	0.0000738	0.00708	0.000130	0.0341	0.00382
620285	6053999	TC-035	0.101	0.0000977	0.00000000050	0.0000733	0.00204	0.000000641	0.314	0.00000991	0.0000740	0.000275	0.000360	0.192	0.0000241	0.0000326	0.00793	0.0000821	0.0395	0.00421
620432	6053798	TC-036	0.0674	0.0000836	0.00000000032	0.0000525	0.00124	0.0000000374	0.301	0.00000822	0.0000489	0.000158	0.000219	0.110	0.0000137	0.0000348	0.00451	0.0000548	0.0222	0.00239
620284	6054477	TC-038	0.0612	0.0000668	0.00000000029	0.0000464	0.00120	0.0000000358	0.241	0.00000681	0.0000441	0.000153	0.000213	0.107	0.0000133	0.0000267	0.00436	0.0000505	0.0216	0.00231
621397	6058987	TC-039	0.00518	0.00000557	0.000000000026	0.00000396	0.0000839	0.0000000298	0.0220	0.000000638	0.00000371	0.0000120	0.0000144	0.00860	0.00000109	0.00000303	0.000352	0.00000494	0.00172	0.000188
627698	6057438	TC-043	0.0302	0.0000161	0.00000000016	0.0000190	0.000602	0.0000000230	0.0269	0.00000182	0.0000225	0.0000971	0.000103	0.0693	0.00000890	0.00000181	0.00291	0.0000247	0.0146	0.00155
623424	6056007	IR213	0.0240	0.0000149	0.00000000012	0.0000160	0.000438	0.0000000172	0.0416	0.00000161	0.0000175	0.0000712	0.0000742	0.0513	0.00000655	0.00000443	0.00215	0.0000193	0.0107	0.00114
623524	6056004	IR214	0.0249	0.0000152	0.00000000013	0.0000164	0.000450	0.0000000179	0.0413	0.00000162	0.0000182	0.0000740	0.0000761	0.0534	0.00000682	0.00000431	0.00224	0.0000198	0.0111	0.00119
624240	6056076	IR218	0.0255	0.0000149	0.00000000013	0.0000166	0.000386	0.000000187	0.0363	0.00000126	0.0000186	0.0000752	0.0000616	0.0554	0.00000709	0.00000342	0.00234	0.0000173	0.0116	0.00124
615677	6050447	IR225	0.00430	0.00000339	0.000000000019	0.00000333	0.0000531	0.0000000241	0.0205	0.000000479	0.00000287	0.00000847	0.00000857	0.00655	0.000000834	0.00000377	0.000265	0.00000455	0.00127	0.000144
615868	6050092	IR227	0.00309	0.00000253	0.000000000013	0.00000240	0.0000384	0.0000000171	0.0149	0.000000344	0.00000207	0.00000605	0.00000623	0.00467	0.000000593	0.00000270	0.000189	0.00000319	0.000901	0.000102
628995	6058442	TC-049	0.0562	0.0000225	0.00000000015	0.0000509	0.000744	0.0000000219	0.360	0.00000266	0.0000274	0.000105	0.000116	0.0744	0.00000862	0.00000170	0.00322	0.0000311	0.0149	0.00150
629654	6057988																			

Appendix A-2: Annual Average Metals in Project Case (Operations) in Air (µg/m³)

X	Y	Description	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn
618610	6053120	TC-V-015	0.207	0.000145	0.0000000051	0.000168	0.00211	0.00000106	1.20	0.0000106	0.000128	0.000311	0.000322	0.274	0.0000324	0.000229	0.0108	0.000117	0.0509	0.00593
618989	6051165	TC-V-020	0.0102	0.00000811	0.00000000037	0.00000802	0.000121	0.000000554	0.0517	0.000000954	0.00000669	0.0000188	0.0000193	0.0150	0.00000187	0.00000933	0.000603	0.00000903	0.00287	0.000327
619331	6050846	TC-V-021	0.00716	0.00000591	0.00000000027	0.00000562	0.0000865	0.0000000390	0.0360	0.000000707	0.00000473	0.0000135	0.0000139	0.0106	0.00000132	0.00000642	0.000426	0.00000653	0.00203	0.000231
619409	6050702	TC-V-022	0.00607	0.00000509	0.00000000023	0.00000476	0.0000740	0.0000000330	0.0304	0.000000612	0.00000403	0.0000115	0.0000119	0.00897	0.00000112	0.00000539	0.000362	0.00000559	0.00173	0.000196
619524	6050956	TC-V-023	0.00777	0.00000643	0.00000000029	0.00000612	0.0000934	0.0000000420	0.0395	0.000000764	0.00000512	0.0000145	0.0000150	0.0114	0.00000142	0.00000701	0.000458	0.00000702	0.00218	0.000248
619337	6051298	TC-V-024	0.0122	0.00000973	0.00000000043	0.00000963	0.000143	0.0000000655	0.0630	0.00000113	0.00000795	0.0000221	0.0000228	0.0176	0.00000219	0.0000113	0.000709	0.0000106	0.00337	0.000385
621240	6057559	TC-V-028	0.0105	0.0000113	0.00000000053	0.00000792	0.000177	0.0000000612	0.0423	0.00000125	0.00000754	0.0000250	0.0000306	0.0178	0.00000225	0.00000566	0.000730	0.00000966	0.00357	0.000389
617266	6050619	TC-V-036	0.00351	0.00000301	0.00000000015	0.00000274	0.0000441	0.0000000193	0.0172	0.000000382	0.00000236	0.00000684	0.00000717	0.00527	0.000000666	0.00000306	0.000213	0.00000345	0.00102	0.000115
617726	6049705	TC-V-041	0.00234	0.00000208	0.000000000098	0.00000183	0.0000296	0.0000000128	0.0115	0.000000257	0.00000158	0.00000455	0.00000484	0.00350	0.000000441	0.00000202	0.000141	0.00000226	0.000675	0.0000765
617994	6050104	TC-V-042	0.00297	0.00000261	0.00000000012	0.00000232	0.0000373	0.0000000162	0.0147	0.000000320	0.00000199	0.00000574	0.00000607	0.00443	0.000000557	0.00000257	0.000179	0.00000283	0.000854	0.0000968
618245	6049880	TC-V-044	0.00272	0.00000241	0.00000000011	0.00000213	0.0000343	0.0000000148	0.0135	0.000000294	0.00000183	0.00000526	0.00000558	0.00405	0.000000510	0.00000235	0.000164	0.00000259	0.000782	0.0000886
621413	6058396	TC-V-046	0.00672	0.00000721	0.00000000034	0.00000513	0.000111	0.0000000389	0.0281	0.000000815	0.00000482	0.0000157	0.0000190	0.0112	0.00000142	0.00000383	0.000461	0.00000632	0.00225	0.000246
621152	6057445	TC-V-047	0.0107	0.0000118	0.00000000054	0.00000817	0.000181	0.0000000624	0.0443	0.00000130	0.00000775	0.0000255	0.0000314	0.0181	0.00000229	0.00000594	0.000742	0.00000994	0.00363	0.000396
616387	6049725	TC-V-048	0.00226	0.00000195	0.000000000097	0.00000176	0.0000285	0.0000000124	0.0110	0.000000252	0.00000152	0.00000442	0.00000464	0.00339	0.000000429	0.00000195	0.000137	0.00000227	0.000655	0.0000742
621006	6058542	TC-V-066	0.00603	0.00000658	0.00000000030	0.00000463	0.0000977	0.0000000344	0.0260	0.000000745	0.00000431	0.0000139	0.0000168	0.00993	0.00000126	0.00000358	0.000406	0.00000570	0.00198	0.000217
618850	6054079	TC-V-107	0.115	0.000151	0.00000000056	0.0000941	0.00298	0.000000575	0.595	0.0000144	0.0000803	0.000275	0.000557	0.179	0.0000213	0.0000508	0.00717	0.0000859	0.0363	0.00374
621733	6056382	TC-V-121	0.0224	0.0000180	0.00000000011	0.0000159	0.000395	0.000000146	0.0635	0.00000195	0.0000161	0.0000599	0.0000676	0.0431	0.00000547	0.00000798	0.00179	0.0000188	0.00884	0.000952
622513	6056313	TC-V-127	0.0343	0.0000216	0.00000000018	0.0000227	0.000650	0.000000248	0.0571	0.00000239	0.0000252	0.000103	0.000111	0.0739	0.00000945	0.00000614	0.00309	0.0000283	0.0154	0.00165
622765	6056256	TC-V-128	0.0378	0.0000228	0.00000000020	0.0000247	0.000722	0.000000276	0.0559	0.00000252	0.0000278	0.000115	0.000124	0.0826	0.0000106	0.00000568	0.00345	0.0000310	0.0173	0.00184
622837	6056107	TC-V-130	0.0500	0.0000288	0.00000000026	0.0000322	0.000972	0.000000372	0.0626	0.00000318	0.0000369	0.000156	0.000166	0.111	0.0000143	0.00000574	0.00467	0.0000408	0.0234	0.00249
619715	6054408	TC-V-140	0.0792	0.0000763	0.00000000038	0.0000591	0.00392	0.000000477	0.288	0.00000829	0.0000564	0.000255	0.000775	0.155	0.0000179	0.0000308	0.00587	0.0000656	0.0327	0.00317
619893	6054330	TC-V-141	0.0795	0.0000843	0.00000000038	0.0000604	0.00262	0.000000464	0.312	0.00000868	0.0000568	0.000223	0.000501	0.144	0.0000173	0.0000324	0.00571	0.0000645	0.0299	0.00305
620497	6055794	TC-V-142	0.0336	0.0000327	0.00000000017	0.0000246	0.000618	0.000000208	0.114	0.00000348	0.0000243	0.0000867	0.000108	0.0614	0.00000775	0.0000140	0.00253	0.0000288	0.0125	0.00135
621190	6058726	NS-V-008	0.00571	0.00000618	0.00000000028	0.00000438	0.0000926	0.0000000327	0.0244	0.000000702	0.00000408	0.0000132	0.0000159	0.00945	0.00000120	0.00000336	0.000387	0.00000541	0.00189	0.000206
621045	6057791	Residence	0.00875	0.00000960	0.00000000044	0.00000668	0.000146	0.0000000506	0.0367	0.00000107	0.00000630	0.0000206	0.0000252	0.0146	0.00000185	0.00000495	0.000600	0.00000817	0.00293	0.000320
621147	6057863	Residence	0.00859	0.00000934	0.00000000043	0.00000654	0.000143	0.0000000498	0.0357	0.00000104	0.00000618	0.0000203	0.0000247	0.0144	0.00000183	0.00000481	0.000592	0.00000802	0.00289	0.000315
621311	6058287	Residence	0.00700	0.00000755	0.00000000035	0.00000535	0.000115	0.0000000404	0.0294	0.000000852	0.00000502	0.0000164	0.0000199	0.0117	0.00000148	0.00000399	0.000479	0.00000657	0.00234	0.000256
624652	6058012	Residence	0.00716	0.00000542	0.00000000036	0.00000502	0.000125	0.0000000476	0.0191	0.000000663	0.00000517	0.0000195	0.0000214	0.0140	0.00000180	0.00000248	0.000583	0.00000663	0.00288	0.000310
624618	6058496	Residence	0.00574	0.00000467	0.00000000029	0.00000410	0.0000984	0.0000000371	0.0172	0.000000564	0.00000412	0.0000151	0.0000168	0.0109	0.00000139	0.00000229	0.000451	0.00000535	0.00222	0.000240
624949	6060663	Residence	0.00265	0.00000239	0.00000000013	0.00000202	0.0000416	0.0000000153	0.0109	0.000000299	0.00000183	0.00000622	0.00000703	0.00447	0.000000568	0.00000134	0.000185	0.00000257	0.000897	0.0000976
630914	6058404	Residence	0.00224	0.00000143	0.000000000081	0.00000188	0.0000320	0.0000000107	0.0121	0.000000248	0.00000132	0.00000472	0.00000524	0.00330	0.000000415	0.000000713	0.000139	0.00000235	0.000659	0.0000694
630879	6058459	Residence	0.00215	0.00000140	0.000000000080	0.00000179	0.0000311	0.0000000104	0.0114	0.000000247	0.00000128	0.00000460	0.00000511	0.00322	0.000000406	0.000000713	0.000135	0.00000234	0.000642	0.0000679
629378	6058797	Residence	0.00966	0.00000476	0.00000000023	0.00000900	0.000217	0.0000000319	0.0701	0.00000847	0.00000586	0.0000318	0.0000416	0.0118	0.00000272	0.00000332	0.000524	0.0000773	0.00227	0.000230
629404	6059357	Residence	0.00196	0.00000143	0.000000000078	0.00000159	0.0000290	0.0000000100	0.00979	0.000000255	0.00000123	0.00000432	0.00000482	0.00302	0.000000388	0.000000820	0.000126	0.00000234	0.000603	0.0000645
629069	6057805	TC-057-PS	0.0271	0.0000142	0.00000000014	0.0000171	0.000538	0.000000206	0.0254	0.00000163	0.0000201	0.0000871	0.0000922	0.0621	0.00000797	0.00000140	0.00261	0.0000223	0.0131	0.00139
627521	6057258	TC-059-PS	0.00953	0.00000578	0.00000000050	0.00000628	0.000180	0.0000000689	0.0153	0.000000668	0.00000697	0.0000288	0.0000308	0.0206	0.00000264	0.00000159	0.000861	0.00000806	0.00430	0.000459
623865	6056012	TC-063-PS	0.0513	0.0000281	0.00000000027	0.0000326	0.000871	0.0000000387	0.0540	0.00000304	0.0000380	0.000159	0.000144	0.115	0.0000149	0.00000426	0.00487	0.0000411	0.0242	0.00259
620369	6054621	TC-072-PS	0.0526	0.0000591	0.00000000025	0.0000404	0.00101	0.0000000300	0.220	0.00000609	0.0000377	0.000128	0.000180	0.0891	0.0000111	0.0000249	0.00364	0.0000442	0.0180	0.00193
620202	6053940	TC-073-PS	0.0899	0.0000959	0.00000000044	0.0000670	0.00187	0.000000542	0.323	0.00000962	0.0000654	0.000236	0.000334	0.163	0.0000203	0.00000333	0.00669	0.0000728	0.0333	0.00355
616721	6051710	TC-003	0.0172	0.0000119	0.000000000078	0.0000126	0.000219	0.000000107	0.0666	0.00000194	0.0000119	0.0000380	0.0000353	0.0291	0.00000379	0.0000140	0.00119	0.0000201	0.00575	0.000643
617680	6052554	TC-011	1.28	0.000807	0.0000000188	0.00105	0.0120	0.00000623	7.82	0.0000484	0.000756	0.00172	0.00178	1.59	0.000183	0.00147	0.0623	0.000609	0.290	0.0342
616951	6051484	TC-014	0.0107	0.00000773	0.00000000044	0.00000810	0.000131	0.0000000625	0.0472	0.00000111	0.00000719	0.0000218	0.0000211	0.0170	0.00000217	0.00000925	0.000689	0.0000112	0.00331	0.000373
616856	6051854	TC-016	0.0388	0.0000254	0.00000000021	0.0000270	0.000529	0.000000268	0.112	0.0										

Appendix A-2: Annual Average Metals in Project Case (Operations) in Air (µg/m³)

X	Y	Description	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn
629406	6058716	TC-055	0.0129	0.00000728	0.00000000028	0.0000119	0.000512	0.0000000392	0.0961	0.0000290	0.0000108	0.0000774	0.000108	0.0164	0.00000680	0.00000942	0.000766	0.000263	0.00308	0.000318
629427	6058194	TC-056-PS	0.141	0.0000569	0.00000000043	0.000123	0.00197	0.000000613	0.802	0.00000533	0.0000726	0.000284	0.000311	0.204	0.0000238	0.00000240	0.00875	0.0000693	0.0413	0.00418
617555	6051713	TC-068	0.0164	0.0000115	0.00000000059	0.0000126	0.000193	0.0000000934	0.0769	0.00000149	0.0000108	0.0000315	0.0000306	0.0251	0.00000317	0.0000150	0.00101	0.0000154	0.00485	0.000550
617613	6051109	TC-069	0.00555	0.00000450	0.00000000022	0.00000431	0.0000683	0.0000000308	0.0269	0.000000576	0.00000370	0.0000107	0.0000110	0.00836	0.00000106	0.00000488	0.000338	0.00000539	0.00162	0.000183
616932	6051276	TC-070	0.00700	0.00000535	0.00000000028	0.00000539	0.0000858	0.0000000396	0.0329	0.000000732	0.00000467	0.0000138	0.0000138	0.0107	0.00000137	0.00000614	0.000435	0.00000712	0.00208	0.000236
616937	6051921	TC-071	0.0606	0.0000406	0.00000000032	0.0000413	0.000833	0.000000441	0.155	0.00000738	0.0000457	0.000156	0.000136	0.118	0.0000159	0.0000505	0.00489	0.0000811	0.0240	0.00265
618442	6050682	TC-076	0.00502	0.00000421	0.00000000020	0.00000393	0.0000616	0.0000000274	0.0249	0.000000510	0.00000334	0.00000957	0.00000996	0.00746	0.000000936	0.00000442	0.000301	0.00000466	0.00144	0.000163
617075	6050627	TC-077	0.00346	0.00000296	0.00000000014	0.00000270	0.0000434	0.0000000191	0.0169	0.000000380	0.00000232	0.00000675	0.00000707	0.00520	0.000000658	0.00000301	0.000210	0.00000344	0.00100	0.000114
617598	6052421	TC-V-009	0.289	0.000184	0.00000000061	0.000232	0.00317	0.00000149	1.62	0.0000358	0.000180	0.000486	0.000503	0.390	0.0000502	0.000316	0.0155	0.000365	0.0727	0.00847
617910	6052417	TC-V-014	0.0783	0.0000512	0.00000000025	0.0000603	0.000926	0.000000444	0.375	0.00000949	0.0000513	0.000152	0.000148	0.118	0.0000154	0.0000759	0.00478	0.0000979	0.0228	0.00260
618626	6050715	TC-V-017	0.00552	0.00000461	0.00000000021	0.00000432	0.0000675	0.0000000302	0.0274	0.000000556	0.00000367	0.0000105	0.0000109	0.00820	0.00000103	0.00000487	0.000331	0.00000510	0.00158	0.000179
618827	6051034	TC-V-018	0.00832	0.00000672	0.00000000031	0.00000652	0.0000999	0.0000000455	0.0416	0.000000802	0.00000549	0.0000156	0.0000160	0.0123	0.00000154	0.00000749	0.000497	0.00000752	0.00237	0.000269
618656	6051499	TC-V-025	0.0135	0.0000104	0.00000000046	0.0000106	0.000157	0.0000000730	0.0691	0.00000119	0.00000877	0.0000244	0.0000249	0.0196	0.00000244	0.0000126	0.000789	0.0000116	0.00375	0.000428
618874	6051892	TC-V-026	0.0228	0.0000174	0.00000000074	0.0000181	0.000259	0.000000121	0.120	0.00000195	0.0000147	0.0000400	0.0000409	0.0324	0.00000400	0.0000218	0.00130	0.0000189	0.00616	0.000706
617462	6051762	TC-V-029	0.0187	0.0000130	0.00000000070	0.0000143	0.000223	0.000000109	0.0855	0.00000175	0.0000124	0.0000368	0.0000354	0.0292	0.00000371	0.0000170	0.00118	0.0000183	0.00567	0.000642
617661	6051759	TC-V-031	0.0181	0.0000127	0.00000000061	0.0000140	0.000208	0.000000101	0.0884	0.00000154	0.0000118	0.0000335	0.0000329	0.0270	0.00000338	0.0000171	0.00109	0.0000160	0.00520	0.000592
629829	6057787	TC-V-032-PS	0.0413	0.0000210	0.00000000022	0.0000264	0.000814	0.000000309	0.0448	0.00000237	0.0000302	0.000131	0.000139	0.0935	0.0000120	0.00000145	0.00393	0.0000330	0.0197	0.00208
616596	6050470	TC-V-034	0.00314	0.00000267	0.00000000013	0.00000245	0.0000393	0.0000000173	0.0154	0.000000347	0.00000210	0.00000611	0.00000640	0.00471	0.000000596	0.00000274	0.000190	0.00000315	0.000908	0.000103
616826	6050416	TC-V-035	0.00304	0.00000261	0.00000000013	0.00000237	0.0000383	0.0000000167	0.0149	0.000000337	0.00000204	0.00000594	0.00000623	0.00457	0.000000578	0.00000263	0.000185	0.00000304	0.000882	0.0001000
620392	6055498	TC-V-045-PS	0.0436	0.0000407	0.00000000022	0.0000315	0.000827	0.000000277	0.137	0.00000434	0.0000317	0.000116	0.000145	0.0821	0.0000104	0.0000162	0.00339	0.0000372	0.0168	0.00180
617523	6052479	TC-V-049	1.11	0.000703	0.0000000169	0.000912	0.0107	0.00000545	6.76	0.0000615	0.000663	0.00155	0.00161	1.39	0.000164	0.00128	0.0547	0.000706	0.254	0.0300
620429	6054842	TC-V-070-PS	0.0446	0.0000511	0.00000000021	0.0000346	0.000849	0.000000252	0.193	0.00000527	0.0000320	0.000107	0.000150	0.0745	0.00000926	0.0000224	0.00304	0.0000376	0.0150	0.00161
620359	6055354	TC-V-092-PS	0.0448	0.0000439	0.00000000022	0.0000328	0.000856	0.000000278	0.151	0.00000476	0.0000325	0.000117	0.000150	0.0824	0.0000104	0.0000177	0.00340	0.0000392	0.0168	0.00181
Land User Maximum (screening)			1.28	0.000807	0.0000000188	0.00105	0.0120	0.00000623	7.82	0.0000735	0.000756	0.00172	0.00178	1.59	0.000183	0.00147	0.0623	0.000706	0.290	0.0342
Land User 95%UCLM (EPC)			0.0557	0.0000382	0.0000000015	0.0000446	0.000703	0.000000291	0.299	0.00000487	0.0000348	0.0000993	0.000115	0.0790	0.00000971	0.0000504	0.00317	0.0000490	0.0151	0.00171

Appendix A-2: Annual Average Metals in Project Case (Operations) in Air (µg/m³)

X	Y	Description	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	TI	U	V	W	Zn
620350	6055101	Horsemen Camp	0.0000709	0.00198	0.000119	0.00276	0.0000220	0.00617	0.0000152	0.0000142	0.00000256	0.000126	0.000000140	0.00000401	0.000503	0.0000513	0.00000225	0.000154	0.000000142	0.000543
625731	6062745	Telkwa Elementary	0.00000611	0.0000806	0.00000358	0.000114	0.000000887	0.000262	0.000000506	0.000000599	0.000000883	0.00000479	0.0000000075	0.000000169	0.0000263	0.00000304	0.0000000842	0.00000612	0.0000000060	0.0000191
625732	6062821	The Ark Playday Center	0.000000581	0.0000772	0.00000346	0.000108	0.000000846	0.000254	0.000000480	0.000000571	0.0000000834	0.00000458	0.0000000071	0.000000161	0.0000246	0.00000284	0.0000000798	0.00000581	0.0000000057	0.0000181
624899	6061799	Tot Spot Family Day Care	0.000000910	0.000112	0.00000512	0.000155	0.00000124	0.000353	0.000000668	0.000000868	0.000000117	0.00000690	0.0000000102	0.000000248	0.0000351	0.00000405	0.000000114	0.00000878	0.0000000089	0.0000257
621359	6055187	Residence	0.00000469	0.000680	0.0000363	0.000797	0.00000763	0.00307	0.00000330	0.00000458	0.000000629	0.0000391	0.0000000660	0.00000116	0.000225	0.0000260	0.000000541	0.0000476	0.0000000360	0.000126
621347	6057296	Residence	0.00000601	0.000577	0.0000329	0.000683	0.00000643	0.00193	0.00000295	0.00000472	0.000000485	0.0000380	0.0000000431	0.00000133	0.000134	0.0000151	0.000000515	0.0000466	0.0000000470	0.000117
621148	6057784	Residence	0.00000405	0.000410	0.0000239	0.000488	0.00000456	0.00147	0.00000219	0.00000318	0.000000360	0.0000260	0.0000000320	0.000000876	0.000102	0.0000116	0.000000364	0.0000319	0.0000000302	0.0000842
621219	6057843	Residence	0.00000395	0.000401	0.0000233	0.000478	0.00000446	0.00144	0.00000214	0.00000313	0.000000352	0.0000255	0.0000000313	0.000000861	0.0000991	0.0000113	0.000000357	0.0000313	0.0000000298	0.0000824
621246	6057883	Residence	0.00000387	0.000394	0.0000228	0.000470	0.00000438	0.00141	0.00000210	0.00000307	0.000000345	0.0000251	0.0000000307	0.000000847	0.0000973	0.0000111	0.000000351	0.0000307	0.0000000293	0.0000810
621260	6058012	Residence	0.00000357	0.000368	0.0000213	0.000438	0.00000409	0.00132	0.00000196	0.00000285	0.000000324	0.0000233	0.0000000287	0.000000784	0.0000913	0.0000104	0.000000328	0.0000286	0.0000000271	0.0000756
621151	6058015	Residence	0.00000351	0.000363	0.0000211	0.000433	0.00000404	0.00132	0.00000194	0.00000280	0.000000321	0.0000229	0.0000000285	0.000000769	0.0000908	0.0000103	0.000000323	0.0000281	0.0000000264	0.0000746
621236	6058089	Residence	0.00000340	0.000353	0.0000204	0.000420	0.00000392	0.00128	0.00000189	0.00000272	0.000000311	0.0000223	0.0000000277	0.000000747	0.0000879	0.0000100	0.000000314	0.0000273	0.0000000257	0.0000725
621248	6058191	Residence	0.00000320	0.000336	0.0000193	0.000400	0.00000372	0.00122	0.00000180	0.00000258	0.000000297	0.0000211	0.0000000264	0.000000706	0.0000839	0.00000956	0.000000298	0.0000258	0.0000000243	0.0000689
621330	6058317	Residence	0.00000301	0.000318	0.0000182	0.000379	0.00000352	0.00116	0.00000170	0.00000244	0.000000281	0.0000200	0.0000000250	0.000000669	0.0000796	0.00000906	0.000000283	0.0000245	0.0000000229	0.0000654
624495	6057858	Residence	0.00000337	0.000343	0.0000148	0.000409	0.00000366	0.000801	0.00000155	0.00000326	0.000000253	0.0000250	0.0000000196	0.000000970	0.0000519	0.00000579	0.000000331	0.0000297	0.0000000367	0.0000702
624887	6057904	Residence	0.00000302	0.000310	0.0000133	0.000369	0.00000331	0.000726	0.00000140	0.00000294	0.000000228	0.0000225	0.0000000178	0.000000875	0.0000472	0.00000528	0.000000299	0.0000268	0.0000000331	0.0000633
624310	6058125	Residence	0.00000308	0.000317	0.0000142	0.000378	0.00000340	0.000797	0.00000147	0.00000293	0.000000240	0.0000227	0.0000000190	0.000000866	0.0000518	0.00000581	0.000000303	0.0000270	0.0000000324	0.0000649
624317	6058312	Residence	0.00000275	0.000288	0.0000132	0.000343	0.00000309	0.000763	0.00000135	0.00000261	0.000000222	0.0000202	0.0000000179	0.000000763	0.0000498	0.00000560	0.000000273	0.0000242	0.0000000283	0.0000589
624301	6058433	Residence	0.00000257	0.000272	0.0000126	0.000324	0.00000293	0.000745	0.00000129	0.00000243	0.000000212	0.0000190	0.0000000172	0.000000709	0.0000487	0.00000550	0.000000257	0.0000227	0.0000000262	0.0000556
624413	6058467	Residence	0.00000250	0.000265	0.0000123	0.000315	0.00000285	0.000721	0.00000126	0.00000237	0.000000206	0.0000185	0.0000000167	0.000000692	0.0000472	0.00000532	0.000000250	0.0000221	0.0000000256	0.0000542
624542	6058470	Residence	0.00000248	0.000262	0.0000120	0.000312	0.00000281	0.000700	0.00000124	0.00000236	0.000000203	0.0000183	0.0000000163	0.000000689	0.0000458	0.00000516	0.000000248	0.0000219	0.0000000255	0.0000536
624516	6058298	Residence	0.00000272	0.000284	0.0000128	0.000338	0.00000304	0.000732	0.00000133	0.00000260	0.000000217	0.0000201	0.0000000173	0.000000763	0.0000477	0.00000536	0.000000271	0.0000240	0.0000000285	0.0000582
624666	6058350	Residence	0.00000264	0.000275	0.0000123	0.000328	0.00000295	0.000701	0.00000129	0.00000252	0.000000210	0.0000195	0.0000000167	0.000000743	0.0000458	0.00000514	0.000000263	0.0000233	0.0000000278	0.0000564
624709	6058331	Residence	0.00000267	0.000277	0.0000124	0.000331	0.00000297	0.000698	0.00000129	0.00000256	0.000000211	0.0000198	0.0000000167	0.000000755	0.0000455	0.00000511	0.000000266	0.0000236	0.0000000282	0.0000569
624755	6058337	Residence	0.00000268	0.000277	0.0000123	0.000331	0.00000297	0.000691	0.00000129	0.00000257	0.000000210	0.0000198	0.0000000166	0.000000759	0.0000451	0.00000506	0.000000266	0.0000236	0.0000000284	0.0000570
624833	6058269	Residence	0.00000280	0.000287	0.0000126	0.000343	0.00000307	0.000691	0.00000132	0.00000269	0.000000215	0.0000207	0.0000000168	0.000000799	0.0000450	0.00000504	0.000000277	0.0000247	0.0000000301	0.0000590
624946	6058333	Residence	0.00000277	0.000283	0.0000123	0.000339	0.00000302	0.000669	0.00000130	0.00000267	0.000000211	0.0000205	0.0000000164	0.000000794	0.0000435	0.00000487	0.000000274	0.0000244	0.0000000300	0.0000583
625055	6058312	Residence	0.00000284	0.000288	0.0000124	0.000345	0.00000307	0.000659	0.00000132	0.00000274	0.000000213	0.0000210	0.0000000163	0.000000819	0.0000429	0.00000478	0.000000280	0.0000250	0.0000000310	0.0000594
625125	6058347	Residence	0.00000284	0.000286	0.0000123	0.000344	0.00000305	0.000647	0.00000131	0.00000274	0.000000212	0.0000210	0.0000000161	0.000000820	0.0000421	0.00000469	0.000000280	0.0000250	0.0000000311	0.0000593
625140	6058498	Residence	0.00000277	0.000279	0.0000120	0.000335	0.00000297	0.000629	0.00000129	0.00000267	0.000000207	0.0000204	0.0000000157	0.000000797	0.0000409	0.00000455	0.000000274	0.0000243	0.0000000303	0.0000580
625012	6058547	Residence	0.00000262	0.000268	0.0000117	0.000321	0.00000286	0.000634	0.00000125	0.00000252	0.000000201	0.0000193	0.0000000155	0.000000748	0.0000413	0.00000462	0.000000260	0.0000230	0.0000000282	0.0000554
624917	6058542	Residence	0.00000254	0.000262	0.0000116	0.000314	0.00000280	0.000644	0.00000122	0.00000243	0.000000199	0.0000187	0.0000000155	0.000000720	0.0000420	0.00000471	0.000000253	0.0000223	0.0000000270	0.0000540
624848	6058478	Residence	0.00000255	0.000265	0.0000118	0.000316	0.00000283	0.000660	0.00000124	0.00000245	0.000000201	0.0000189	0.0000000158	0.000000723	0.0000431	0.00000483	0.000000254	0.0000225	0.0000000271	0.0000545
624738	6058471	Residence	0.00000250	0.000262	0.0000118	0.000313	0.00000281	0.000674	0.00000123	0.00000239	0.000000201	0.0000185	0.0000000159	0.000000704	0.0000440	0.00000495	0.000000250	0.0000221	0.0000000262	0.0000538
624533	6058522	Residence	0.00000241	0.000256	0.0000118	0.000305	0.00000275	0.000693	0.00000121	0.00000229	0.000000199	0.0000178	0.0000000161	0.000000669	0.0000454	0.00000512	0.000000242	0.0000213	0.0000000247	0.0000524
624511	6059467	Residence	0.00000185	0.000199	0.00000943	0.000239	0.00000214	0.000564	0.000000986	0.00000173	0.000000161	0.0000136	0.0000000130	0.000000502	0.0000376	0.00000425	0.000000189	0.0000163	0.0000000184	0.0000413
624728	6060340	Residence	0.00000132	0.000150	0.00000712	0.000184	0.00000161	0.000447	0.000000780	0.00000126	0.000000128	0.00000993	0.0000000104	0.000000360	0.0000313	0.00000356	0.000000144	0.0000120	0.0000000131	0.0000318
624551	6060520	Residence	0.00000134	0.000150	0.00000721	0.000185	0.00000162	0.000445	0.000000786	0.00000126	0.000000129	0.00000997	0.0000000104	0.000000363	0.0000315	0.00000358	0.000000144	0.0000120	0.0000000132	0.0000320
624633	6060666	Residence	0.00000118	0.000136	0.00000660	0.000168	0.00000147	0.000424	0.000000723	0.00000111	0.000000120	0.00000885	0.0000000099	0.000000316	0.0000306	0.00000349	0.000000130	0.0000107	0.0000000114	0.0000290
624707	6060548	Residence	0.00000119	0.000138	0.00000666	0.000170	0.00000149	0.000429	0.000000730	0.00000113	0.000000121	0.00000901	0.0000000100	0.000000322	0.0000307	0.00000350	0.000000132	0.0000109	0.0000000116	0.0000293
624750	6060645	Residence	0.00000110	0.000130	0.00000633	0.000161	0.00000141	0.000417	0.000000695	0.00000105	0.000000116	0.00000840								

Appendix A-2: Annual Average Metals in Project Case (Operations) in Air (µg/m³)

X	Y	Description	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	TI	U	V	W	Zn
629162	6059498	Residence	0.000000618	0.0000873	0.00000348	0.000128	0.000000936	0.000272	0.000000587	0.000000632	0.000000101	0.00000504	0.0000000080	0.000000179	0.0000281	0.00000325	0.0000000966	0.00000641	0.0000000064	0.0000218
628542	6058933	Residence	0.00000686	0.000790	0.0000253	0.00166	0.0000108	0.00213	0.00000575	0.00000615	0.00000133	0.0000453	0.000000155	0.00000194	0.000641	0.0000748	0.000000983	0.0000767	0.0000000779	0.000220
628318	6058826	Residence	0.00000557	0.000548	0.0000190	0.000932	0.00000684	0.00112	0.00000306	0.00000516	0.000000655	0.0000380	0.0000000716	0.00000163	0.000275	0.0000318	0.000000618	0.0000543	0.0000000649	0.000132
628475	6058809	Residence	0.00000731	0.000746	0.0000255	0.00140	0.0000100	0.00179	0.00000431	0.00000670	0.00000103	0.0000491	0.000000126	0.00000212	0.000506	0.0000588	0.000000842	0.0000762	0.0000000850	0.000183
628469	6058607	Residence	0.00000625	0.000588	0.0000207	0.000951	0.00000723	0.00110	0.00000301	0.00000581	0.000000638	0.0000426	0.0000000695	0.00000183	0.000259	0.0000299	0.000000646	0.0000593	0.0000000734	0.000136
630293	6058896	Residence	0.000000652	0.0000892	0.00000335	0.000134	0.000000926	0.000244	0.000000647	0.000000656	0.000000105	0.00000517	0.0000000073	0.000000190	0.0000252	0.00000291	0.000000106	0.00000650	0.0000000069	0.0000237
630568	6058612	Residence	0.000000838	0.000110	0.00000392	0.000177	0.00000118	0.000282	0.000000828	0.000000817	0.000000140	0.00000634	0.0000000105	0.000000242	0.0000382	0.00000442	0.000000136	0.00000836	0.0000000091	0.0000304
630843	6058516	Residence	0.000000631	0.0000858	0.00000326	0.000131	0.000000930	0.000247	0.000000593	0.000000637	0.000000103	0.00000500	0.0000000082	0.000000185	0.0000296	0.00000342	0.0000000986	0.00000650	0.0000000068	0.0000221
630943	6058355	Residence	0.000000677	0.0000902	0.00000344	0.000141	0.00000102	0.000266	0.000000599	0.000000682	0.000000110	0.00000533	0.0000000097	0.000000199	0.0000358	0.00000416	0.000000101	0.00000712	0.0000000074	0.0000227
630925	6057608	Residence	0.000000982	0.000116	0.00000441	0.000172	0.00000131	0.000297	0.000000680	0.000000980	0.000000125	0.00000751	0.0000000112	0.000000293	0.0000398	0.00000460	0.000000126	0.00000981	0.0000000111	0.0000275
631013	6057550	Residence	0.000000929	0.000112	0.00000425	0.000167	0.00000126	0.000292	0.000000670	0.000000930	0.000000122	0.00000714	0.0000000109	0.000000277	0.0000389	0.00000449	0.000000122	0.00000935	0.0000000105	0.0000268
630907	6057496	Residence	0.000000965	0.000114	0.00000437	0.000167	0.00000128	0.000293	0.000000663	0.000000967	0.000000121	0.00000741	0.0000000107	0.000000289	0.0000376	0.00000433	0.000000123	0.00000961	0.0000000109	0.0000269
630457	6057731	Residence	0.00000126	0.000135	0.00000527	0.000190	0.00000154	0.000321	0.000000678	0.00000125	0.000000127	0.00000945	0.0000000121	0.000000377	0.0000410	0.00000471	0.000000139	0.0000121	0.0000000145	0.0000297
630474	6057528	Residence	0.000000999	0.000114	0.00000457	0.000158	0.00000129	0.000300	0.000000588	0.00000101	0.000000109	0.00000775	0.0000000102	0.000000301	0.0000346	0.00000398	0.000000116	0.00000987	0.0000000114	0.0000250
626743	6062021	Cabin	0.000000509	0.0000710	0.00000320	0.0000950	0.000000767	0.000244	0.000000427	0.000000519	0.0000000736	0.00000420	0.0000000062	0.000000144	0.0000209	0.00000241	0.0000000712	0.00000520	0.0000000050	0.0000161
629907	6057772	TC-001-PS	0.0000143	0.00110	0.0000396	0.00132	0.0000119	0.000782	0.00000369	0.0000133	0.000000593	0.0000966	0.0000000440	0.00000425	0.0000773	0.00000778	0.00000112	0.000116	0.000000172	0.000218
615812	6051368	TC-004	0.00000135	0.000502	0.0000156	0.000586	0.00000489	0.00216	0.00000263	0.00000311	0.000000477	0.0000268	0.0000000372	0.000000767	0.000114	0.0000133	0.000000457	0.0000286	0.0000000226	0.000101
615475	6051133	TC-005	0.00000117	0.000440	0.0000138	0.000511	0.00000429	0.00191	0.00000229	0.00000271	0.000000417	0.0000234	0.0000000329	0.000000665	0.000101	0.0000119	0.000000396	0.0000250	0.0000000194	0.0000880
615717	6050855	TC-006	0.000000892	0.000315	0.0000103	0.000362	0.00000310	0.00139	0.00000160	0.00000193	0.000000296	0.0000168	0.0000000241	0.000000471	0.0000747	0.00000874	0.000000278	0.0000180	0.0000000136	0.0000619
616577	6050085	TC-007	0.000000490	0.000135	0.00000517	0.000153	0.00000137	0.000619	0.000000669	0.000000834	0.000000125	0.00000728	0.0000000110	0.000000202	0.0000348	0.00000405	0.000000114	0.00000798	0.0000000058	0.0000257
616170	6050352	TC-008	0.000000562	0.000168	0.00000612	0.000191	0.00000170	0.000769	0.000000836	0.00000103	0.000000157	0.00000902	0.0000000135	0.000000249	0.0000425	0.00000496	0.000000143	0.00000980	0.0000000071	0.0000322
616083	6051054	TC-009	0.000000896	0.000304	0.0000101	0.000349	0.00000301	0.00135	0.00000154	0.00000187	0.000000285	0.0000162	0.0000000234	0.000000455	0.0000729	0.00000853	0.000000266	0.0000174	0.0000000131	0.0000593
616390	6051025	TC-010	0.000000802	0.000260	0.00000899	0.000294	0.00000260	0.00119	0.00000128	0.00000159	0.000000241	0.0000139	0.0000000206	0.000000382	0.0000648	0.00000757	0.000000221	0.0000149	0.0000000108	0.0000494
618810	6053186	TC-012	0.0000194	0.00711	0.000262	0.00678	0.0000749	0.0396	0.0000213	0.0000424	0.00000546	0.000385	0.000000667	0.00000931	0.00215	0.000251	0.00000431	0.000405	0.000000220	0.000955
630203	6058465	TC-013	0.00000234	0.000257	0.00000919	0.000471	0.00000342	0.000703	0.00000148	0.00000220	0.000000353	0.0000164	0.0000000432	0.000000685	0.000173	0.0000201	0.000000281	0.0000253	0.0000000270	0.0000615
616080	6052375	TC-028	0.00000780	0.00302	0.0000829	0.00382	0.0000282	0.0103	0.0000185	0.0000204	0.00000299	0.000167	0.000000183	0.00000545	0.000519	0.0000608	0.00000321	0.000181	0.000000181	0.000702
617192	6049954	TC-029	0.000000485	0.000128	0.00000507	0.000144	0.00000132	0.000593	0.000000627	0.000000796	0.000000118	0.00000695	0.0000000105	0.000000192	0.0000335	0.00000390	0.000000106	0.00000766	0.0000000055	0.0000241
618297	6050163	TC-030	0.000000614	0.000166	0.00000656	0.000185	0.00000171	0.000781	0.000000785	0.00000103	0.000000151	0.00000903	0.0000000139	0.000000248	0.0000441	0.00000514	0.000000135	0.00000993	0.0000000070	0.0000305
617975	6049914	TC-031	0.000000520	0.000137	0.00000546	0.000153	0.00000141	0.000636	0.000000658	0.000000850	0.000000125	0.00000742	0.0000000113	0.000000205	0.0000360	0.00000420	0.000000112	0.00000819	0.0000000058	0.0000254
618854	6049902	TC-032	0.000000575	0.000153	0.00000610	0.000170	0.00000158	0.000719	0.000000719	0.000000947	0.000000138	0.00000829	0.0000000128	0.000000227	0.0000409	0.00000476	0.000000123	0.00000914	0.0000000064	0.0000279
616455	6052608	TC-034	0.0000135	0.00556	0.000150	0.00688	0.0000525	0.0200	0.0000321	0.0000374	0.00000540	0.000309	0.000000355	0.00000986	0.00103	0.000121	0.00000568	0.000332	0.000000322	0.00124
620285	6053999	TC-035	0.0000656	0.00419	0.000250	0.00497	0.0000486	0.0106	0.0000190	0.0000406	0.00000315	0.000316	0.000000285	0.0000121	0.000849	0.0000932	0.00000379	0.000394	0.000000457	0.000838
620432	6053798	TC-036	0.0000397	0.00286	0.000207	0.00338	0.0000342	0.0107	0.0000150	0.0000230	0.00000250	0.000189	0.000000252	0.00000635	0.000841	0.0000947	0.00000237	0.000243	0.000000221	0.000569
620284	6054477	TC-038	0.0000395	0.00258	0.000167	0.00308	0.0000303	0.00838	0.0000129	0.0000222	0.00000218	0.000179	0.000000207	0.00000636	0.000670	0.0000747	0.00000225	0.000226	0.000000230	0.000519
621397	6058987	TC-039	0.00000217	0.000240	0.0000136	0.000287	0.00000265	0.000886	0.00000130	0.00000182	0.000000215	0.0000149	0.0000000189	0.000000494	0.0000603	0.00000689	0.000000215	0.0000182	0.0000000168	0.0000496
627698	6057438	TC-043	0.0000161	0.00124	0.0000452	0.00143	0.0000132	0.000861	0.00000411	0.0000151	0.000000623	0.000109	0.0000000405	0.00000479	0.0000448	0.00000379	0.00000125	0.0000130	0.000000193	0.000244
623424	6056007	IR213	0.0000109	0.00100	0.0000397	0.00115	0.0000108	0.00150	0.00000352	0.0000111	0.000000572	0.0000822	0.0000000461	0.00000344	0.0000952	0.0000102	0.000000958	0.0000979	0.000000135	0.000192
623524	6056004	IR214	0.0000110	0.00103	0.0000407	0.00118	0.0000111	0.00148	0.00000354	0.0000116	0.000000573	0.0000854	0.0000000465	0.00000359	0.0000929	0.00000994	0.000000986	0.000102	0.000000142	0.000196
624240	6056076	IR218	0.00000607	0.00101	0.0000393	0.00111	0.0000111	0.00125	0.00000261	0.0000121	0.000000414	0.0000877	0.0000000436	0.00000379	0.0000714	0.00000799	0.000000912	0.000105	0.000000151	0.000174
615677	6050447	IR225	0.000000682	0.000229	0.00000775	0.000262	0.00000227	0.00103	0.00000115	0.00000140	0.000000215	0.0000122	0.0000000178	0.000000340	0.0000557	0.00000651	0.000000199	0.0000131	0.0000000098	0.0000445
615868	6050092	IR227	0.000000528	0.000163	0.00000580	0.000185	0.00000163	0.000739	0.000000814	0.000000999	0.000000152	0.00000871	0.0000000129							

Appendix A-2: Annual Average Metals in Project Case (Operations) in Air (µg/m³)

X	Y	Description	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	TI	U	V	W	Zn
618610	6053120	TC-V-015	0.0000162	0.0105	0.000308	0.00945	0.000109	0.0627	0.0000249	0.0000587	0.00000784	0.000550	0.00000102	0.0000120	0.00328	0.000385	0.00000571	0.000549	0.000000236	0.00123
618989	6051165	TC-V-020	0.00000151	0.000525	0.0000183	0.000565	0.00000535	0.00256	0.00000223	0.00000320	0.000000458	0.0000282	0.0000000444	0.000000753	0.000141	0.0000165	0.000000404	0.0000303	0.0000000205	0.0000900
619331	6050846	TC-V-021	0.00000116	0.000368	0.0000135	0.000402	0.00000376	0.00177	0.00000164	0.00000226	0.000000326	0.0000199	0.0000000309	0.000000536	0.0000982	0.0000115	0.000000290	0.0000215	0.0000000148	0.0000649
619409	6050702	TC-V-022	0.00000103	0.000312	0.0000116	0.000342	0.00000319	0.00148	0.00000141	0.00000192	0.000000278	0.0000168	0.0000000261	0.000000457	0.0000831	0.00000970	0.000000247	0.0000183	0.0000000127	0.0000556
619524	6050956	TC-V-023	0.00000125	0.000398	0.0000146	0.000434	0.00000408	0.00193	0.00000176	0.00000243	0.000000354	0.0000214	0.0000000338	0.000000573	0.000108	0.0000126	0.000000312	0.0000232	0.0000000157	0.0000700
619337	6051298	TC-V-024	0.00000175	0.000626	0.0000219	0.000671	0.00000640	0.00311	0.00000263	0.00000377	0.000000549	0.0000335	0.0000000539	0.000000876	0.000172	0.0000201	0.000000475	0.0000358	0.0000000233	0.000106
621240	6057559	TC-V-028	0.00000481	0.000476	0.0000277	0.000565	0.00000530	0.00167	0.00000251	0.00000376	0.000000412	0.0000306	0.0000000367	0.00000104	0.000116	0.0000131	0.000000423	0.0000375	0.0000000363	0.0000974
617266	6050619	TC-V-036	0.000000651	0.000182	0.00000694	0.000205	0.00000185	0.000841	0.000000882	0.00000113	0.000000167	0.00000984	0.0000000148	0.000000272	0.0000469	0.00000547	0.000000151	0.0000108	0.0000000078	0.0000341
617726	6049705	TC-V-041	0.000000463	0.000120	0.00000482	0.000135	0.00000123	0.000556	0.000000583	0.000000746	0.000000110	0.00000652	0.0000000099	0.000000180	0.0000316	0.00000368	0.0000000989	0.00000720	0.0000000051	0.0000224
617994	6050104	TC-V-042	0.000000570	0.000152	0.00000603	0.000170	0.00000156	0.000709	0.000000727	0.000000945	0.000000138	0.00000826	0.0000000126	0.000000228	0.0000401	0.00000467	0.000000124	0.00000910	0.0000000065	0.0000281
618245	6049880	TC-V-044	0.000000529	0.000139	0.00000557	0.000155	0.00000143	0.000650	0.000000665	0.000000864	0.000000127	0.00000756	0.0000000116	0.000000208	0.0000369	0.00000430	0.000000113	0.00000834	0.0000000059	0.0000257
621413	6058396	TC-V-046	0.00000291	0.000309	0.0000176	0.000369	0.00000342	0.00112	0.00000165	0.00000237	0.000000273	0.0000194	0.0000000242	0.000000651	0.0000771	0.00000878	0.000000275	0.0000238	0.0000000223	0.0000635
621152	6057445	TC-V-047	0.000000497	0.000489	0.0000289	0.000582	0.00000546	0.00175	0.00000260	0.00000382	0.000000428	0.0000312	0.0000000382	0.00000105	0.000121	0.0000138	0.000000434	0.0000384	0.0000000365	0.000100
616387	6049725	TC-V-048	0.000000427	0.000117	0.00000450	0.000133	0.00000119	0.000536	0.000000584	0.000000724	0.000000109	0.00000632	0.0000000095	0.000000175	0.0000301	0.00000351	0.0000000989	0.00000693	0.0000000050	0.0000224
621006	6058542	TC-V-066	0.00000255	0.000279	0.0000160	0.000333	0.00000309	0.00104	0.00000151	0.00000209	0.000000250	0.0000172	0.0000000223	0.000000568	0.0000715	0.00000816	0.000000247	0.0000211	0.0000000192	0.0000573
618850	6054079	TC-V-107	0.000130	0.00441	0.000381	0.00557	0.0000578	0.0172	0.0000247	0.0000354	0.00000461	0.000303	0.000000473	0.00000990	0.00175	0.000192	0.00000360	0.000413	0.000000348	0.000917
621733	6056382	TC-V-121	0.0000103	0.000969	0.0000457	0.00113	0.0000106	0.00245	0.00000409	0.00000923	0.000000688	0.0000712	0.0000000600	0.00000273	0.000165	0.0000184	0.000000886	0.0000855	0.000000103	0.000189
622513	6056313	TC-V-127	0.0000170	0.00144	0.0000579	0.00167	0.0000155	0.00209	0.00000523	0.0000160	0.000000839	0.000118	0.0000000643	0.00000496	0.000130	0.0000138	0.00000139	0.000141	0.000000195	0.000280
622765	6056256	TC-V-128	0.0000190	0.00157	0.0000617	0.00182	0.0000170	0.00201	0.00000557	0.0000179	0.000000885	0.000132	0.0000000660	0.00000558	0.000123	0.0000127	0.00000154	0.000157	0.000000221	0.000307
622837	6056107	TC-V-130	0.0000257	0.00207	0.0000790	0.00239	0.0000222	0.00218	0.00000708	0.0000242	0.00000111	0.000177	0.0000000795	0.00000760	0.000128	0.0000127	0.00000204	0.000211	0.000000303	0.000403
619715	6054408	TC-V-140	0.000210	0.00329	0.000221	0.00391	0.0000420	0.0106	0.0000154	0.0000299	0.00000377	0.000269	0.000000251	0.00000872	0.000951	0.0000880	0.00000287	0.000324	0.000000322	0.000698
619893	6054330	TC-V-141	0.000123	0.00328	0.000224	0.00393	0.0000405	0.0107	0.0000160	0.0000290	0.00000324	0.000246	0.000000267	0.00000837	0.000939	0.0000967	0.00000284	0.000307	0.000000306	0.000676
620497	6055794	TC-V-142	0.0000181	0.00146	0.0000821	0.00172	0.0000164	0.00430	0.00000690	0.0000130	0.00000115	0.000103	0.000000103	0.00000377	0.000309	0.0000345	0.00000131	0.000126	0.000000138	0.000292
621190	6058726	NS-V-008	0.00000240	0.000264	0.0000151	0.000315	0.00000292	0.000981	0.00000143	0.00000199	0.000000236	0.0000164	0.0000000210	0.000000542	0.0000670	0.00000765	0.000000235	0.0000200	0.0000000184	0.0000544
621045	6057791	Residence	0.00000394	0.000401	0.0000235	0.000478	0.00000446	0.00146	0.00000215	0.00000309	0.000000354	0.0000253	0.0000000316	0.000000848	0.000101	0.0000115	0.000000356	0.0000311	0.0000000292	0.0000824
621147	6057863	Residence	0.00000386	0.000393	0.0000229	0.000468	0.00000437	0.00142	0.00000210	0.00000305	0.000000346	0.0000249	0.0000000308	0.000000838	0.0000978	0.0000111	0.000000350	0.0000306	0.0000000289	0.0000808
621311	6058287	Residence	0.00000305	0.000322	0.0000185	0.000384	0.00000357	0.00117	0.00000172	0.00000247	0.000000285	0.0000202	0.0000000253	0.000000676	0.0000806	0.00000918	0.000000286	0.0000248	0.0000000232	0.0000661
624652	6058012	Residence	0.00000312	0.000319	0.0000138	0.000380	0.00000341	0.000754	0.00000145	0.00000301	0.000000236	0.0000231	0.0000000184	0.000000896	0.0000489	0.00000547	0.000000308	0.0000275	0.0000000338	0.0000654
624618	6058496	Residence	0.00000245	0.000258	0.0000118	0.000308	0.00000277	0.000685	0.00000122	0.00000233	0.000000200	0.0000181	0.0000000160	0.000000682	0.0000449	0.00000505	0.000000245	0.0000216	0.0000000253	0.0000529
624949	6060663	Residence	0.000000976	0.000120	0.00000585	0.000149	0.00000131	0.000402	0.000000646	0.000000945	0.000000109	0.00000759	0.0000000093	0.000000264	0.0000297	0.00000340	0.000000113	0.00000923	0.0000000093	0.0000255
630914	6058404	Residence	0.000000664	0.0000890	0.00000339	0.000138	0.000000991	0.000261	0.000000599	0.000000669	0.000000108	0.00000523	0.0000000093	0.000000195	0.0000341	0.00000396	0.000000101	0.00000695	0.0000000072	0.0000226
630879	6058459	Residence	0.000000649	0.0000876	0.00000333	0.000135	0.000000963	0.000254	0.000000598	0.000000654	0.000000106	0.00000513	0.0000000088	0.000000190	0.0000320	0.00000370	0.0000000999	0.00000674	0.0000000070	0.0000224
629378	6058797	Residence	0.00000422	0.00115	0.0000121	0.00295	0.00000673	0.000791	0.0000233	0.00000205	0.00000300	0.0000183	0.0000000489	0.000000634	0.000214	0.0000250	0.00000289	0.0000253	0.0000000248	0.000687
629404	6059357	Residence	0.000000612	0.0000871	0.00000342	0.000129	0.000000923	0.000265	0.000000611	0.000000623	0.000000103	0.00000497	0.0000000078	0.000000177	0.0000273	0.00000316	0.0000000991	0.00000630	0.0000000063	0.0000224
629069	6057805	TC-057-PS	0.0000143	0.00110	0.0000401	0.00129	0.0000118	0.000729	0.00000371	0.0000135	0.000000565	0.0000977	0.0000000370	0.00000429	0.0000439	0.00000386	0.00000113	0.000116	0.000000173	0.000219
627521	6057258	TC-059-PS	0.00000467	0.000401	0.0000155	0.000469	0.00000429	0.000549	0.00000149	0.00000446	0.000000238	0.0000330	0.0000000175	0.00000139	0.0000346	0.00000364	0.000000396	0.0000392	0.0000000547	0.0000795
623865	6056012	TC-063-PS	0.0000175	0.00210	0.0000767	0.00242	0.0000224	0.00175	0.00000685	0.0000252	0.00000100	0.000182	0.0000000745	0.00000798	0.0000914	0.00000938	0.00000209	0.000217	0.000000320	0.000404
620369	6054621	TC-072-PS	0.0000334	0.00224	0.000147	0.00269	0.0000263	0.00773	0.0000115	0.0000186	0.00000196	0.000151	0.000000187	0.00000523	0.000614	0.0000688	0.00000194	0.000191	0.000000186	0.000454
620202	6053940	TC-073-PS	0.0000642	0.00371	0.000244	0.00443	0.0000439	0.0108	0.0000180	0.0000341	0.00000302	0.000270	0.000000282	0.00000998	0.000894	0.0000985	0.00000328	0.000343	0.000000370	0.000749
616721	6051710	TC-003	0.00000243	0.000953	0.0000275	0.00110	0.00000902	0.00373	0.00000487	0.00000635	0.000000841	0.0000530	0.0000000615	0.00000163	0.000175	0.0000204	0.000000889	0.0000559	0.0000000513	0.000193
617680	6052554	TC-011	0.0000530	0.0635	0.00165	0.0553	0.000664	0.404	0.000120	0.000339	0.0000473	0.00326	0.00000656	0.0000648	0.0215	0.00253	0.0000310	0.00317	0.00000101	0.

Appendix A-2: Annual Average Metals in Project Case (Operations) in Air (µg/m³)

X	Y	Description	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	TI	U	V	W	Zn
629406	6058716	TC-055	0.0000100	0.00353	0.0000217	0.00949	0.0000160	0.000995	0.0000804	0.00000253	0.00000992	0.0000293	0.0000000652	0.000000788	0.000321	0.0000377	0.00000977	0.0000328	0.0000000311	0.00233
629427	6058194	TC-056-PS	0.0000433	0.00369	0.000135	0.00614	0.0000515	0.00754	0.0000122	0.0000402	0.00000384	0.000290	0.000000584	0.0000129	0.00227	0.000263	0.00000347	0.000429	0.000000521	0.000704
617555	6051713	TC-068	0.00000201	0.000871	0.0000259	0.000936	0.00000858	0.00407	0.00000368	0.00000543	0.000000742	0.0000472	0.0000000677	0.00000130	0.000207	0.0000243	0.000000696	0.0000492	0.0000000365	0.000152
617613	6051109	TC-069	0.000000928	0.000289	0.0000103	0.000322	0.00000292	0.00134	0.00000135	0.00000179	0.000000260	0.0000156	0.0000000233	0.000000432	0.0000733	0.00000855	0.000000238	0.0000169	0.0000000123	0.0000532
616932	6051276	TC-070	0.00000107	0.000371	0.0000122	0.000416	0.00000368	0.00167	0.00000177	0.00000231	0.000000335	0.0000200	0.0000000288	0.000000563	0.0000890	0.0000104	0.000000314	0.0000214	0.0000000162	0.0000697
616937	6051921	TC-071	0.00000876	0.00372	0.0000965	0.00414	0.0000329	0.0127	0.0000189	0.0000266	0.00000288	0.000214	0.000000172	0.00000708	0.000368	0.0000431	0.00000362	0.000218	0.000000234	0.000768
618442	6050682	TC-076	0.000000869	0.000258	0.00000965	0.000284	0.00000264	0.00122	0.00000117	0.00000160	0.000000230	0.0000140	0.0000000214	0.000000382	0.0000680	0.00000793	0.000000206	0.0000152	0.0000000107	0.0000463
617075	6050627	TC-077	0.000000640	0.000180	0.00000681	0.000203	0.00000183	0.000826	0.000000880	0.00000111	0.000000165	0.00000970	0.0000000146	0.000000269	0.0000461	0.00000537	0.000000150	0.0000106	0.0000000077	0.0000339
617598	6052421	TC-V-009	0.0000225	0.0170	0.000391	0.0202	0.000158	0.0847	0.0000953	0.0000834	0.0000182	0.000779	0.00000138	0.0000175	0.00447	0.000525	0.0000155	0.000767	0.000000372	0.00349
617910	6052417	TC-V-014	0.00000831	0.00453	0.000113	0.00534	0.0000422	0.0202	0.0000248	0.0000256	0.00000450	0.000226	0.000000330	0.00000601	0.00101	0.000119	0.00000423	0.000230	0.000000163	0.000935
618626	6050715	TC-V-017	0.000000940	0.000283	0.0000105	0.000311	0.00000290	0.00134	0.00000128	0.00000175	0.000000252	0.0000154	0.0000000236	0.000000420	0.0000747	0.00000872	0.000000226	0.0000167	0.0000000118	0.0000507
618827	6051034	TC-V-018	0.00000129	0.000428	0.0000153	0.000465	0.00000436	0.00206	0.00000187	0.00000264	0.000000376	0.0000231	0.0000000358	0.000000625	0.000113	0.0000133	0.000000335	0.0000249	0.0000000173	0.0000748
618656	6051499	TC-V-025	0.00000182	0.000694	0.0000233	0.000737	0.00000706	0.00345	0.00000282	0.00000420	0.000000599	0.0000372	0.0000000593	0.000000977	0.000188	0.0000220	0.000000522	0.0000395	0.0000000260	0.000116
618874	6051892	TC-V-026	0.00000286	0.00117	0.0000388	0.00123	0.0000119	0.00599	0.00000460	0.00000693	0.00000101	0.0000621	0.000000102	0.00000158	0.000328	0.0000384	0.000000854	0.0000654	0.0000000405	0.000190
617462	6051762	TC-V-029	0.00000229	0.00100	0.0000293	0.00109	0.00000983	0.00458	0.00000435	0.00000634	0.000000858	0.0000547	0.0000000759	0.00000154	0.000229	0.0000269	0.000000822	0.0000570	0.0000000440	0.000179
617661	6051759	TC-V-031	0.00000208	0.000953	0.0000282	0.00100	0.00000947	0.00464	0.00000378	0.00000584	0.000000802	0.0000513	0.0000000771	0.00000137	0.000239	0.0000280	0.000000727	0.0000533	0.0000000371	0.000158
629829	6057787	TC-V-032-PS	0.0000217	0.00164	0.0000591	0.00195	0.0000178	0.00100	0.00000540	0.0000202	0.000000847	0.000146	0.0000000595	0.00000646	0.0000859	0.00000811	0.00000168	0.000175	0.000000262	0.000325
616596	6050470	TC-V-034	0.000000574	0.000164	0.00000614	0.000185	0.00000166	0.000753	0.000000807	0.00000101	0.000000152	0.00000879	0.0000000133	0.000000243	0.0000420	0.00000490	0.000000138	0.00000960	0.0000000069	0.0000310
616826	6050416	TC-V-035	0.000000569	0.000158	0.00000602	0.000179	0.00000161	0.000723	0.000000780	0.000000976	0.000000146	0.00000851	0.0000000128	0.000000236	0.0000405	0.00000473	0.000000133	0.00000933	0.0000000068	0.0000300
620392	6055498	TC-V-045-PS	0.0000246	0.00187	0.000103	0.00221	0.0000211	0.00503	0.00000866	0.0000174	0.00000143	0.000136	0.000000125	0.00000513	0.000367	0.0000407	0.00000171	0.000167	0.000000191	0.000376
617523	6052479	TC-V-049	0.0000522	0.0574	0.00144	0.0542	0.000585	0.349	0.000158	0.000297	0.0000474	0.00286	0.00000568	0.0000572	0.0186	0.00219	0.0000335	0.00278	0.000000920	0.00728
620429	6054842	TC-V-070-PS	0.0000277	0.00192	0.000127	0.00229	0.0000225	0.00688	0.00000997	0.0000155	0.00000170	0.000127	0.000000163	0.00000432	0.000540	0.0000606	0.00000164	0.000161	0.000000152	0.000387
620359	6055354	TC-V-092-PS	0.0000261	0.00193	0.000111	0.00231	0.0000219	0.00550	0.00000945	0.0000174	0.00000155	0.000137	0.000000135	0.00000508	0.000410	0.0000456	0.00000177	0.000170	0.000000188	0.000396
Land User Maximum (screening)			0.000210	0.0635	0.00165	0.0553	0.000664	0.404	0.000201	0.000339	0.0000474	0.00326	0.00000656	0.0000648	0.0215	0.00253	0.0000335	0.00317	0.00000101	0.00728
Land User 95%UCLM (EPC)			0.0000131	0.00280	0.0000851	0.00308	0.0000286	0.0140	0.0000120	0.0000167	0.00000257	0.000149	0.000000252	0.00000390	0.000825	0.0000961	0.00000218	0.000159	0.000000106	0.000483

Appendix A-3: Annual Average Metal Deposition with Dust in Project Case (Operations) (g/m²-year)

Parameter	Minimum	Median	Mean	Std. Dev.	95% UCLM	90th Percentile	95th Percentile	Maximum	Count
Aluminum	0.0000651	0.0129	0.0345	0.0731	0.0358	0.0832	0.127	2.51	12241
Antimony	0.000000005	0.000000740	0.00000221	0.00000551	0.00000230	0.00000490	0.00000782	0.000192	12241
Arsenic	0.0000000416	0.00000697	0.0000200	0.0000437	0.0000208	0.0000485	0.0000749	0.00152	12241
Barium	0.000000723	0.000158	0.000397	0.000764	0.000411	0.000979	0.00150	0.0221	12241
Bismuth	0.000000000	0.0000000838	0.000000204	0.000000396	0.000000211	0.000000496	0.000000751	0.0000116	12241
Boron	0.0000000500	0.00000913	0.0000264	0.0000645	0.0000275	0.0000624	0.0000941	0.00220	12241
Cadmium	0.000000002	0.000000387	0.00000118	0.00000282	0.00000123	0.00000261	0.00000427	0.0000810	12241
Calcium	0.000267	0.0287	0.131	0.510	0.140	0.272	0.489	17.0	12241
Chromium	0.000000138	0.0000323	0.0000787	0.000150	0.0000813	0.000190	0.000300	0.00411	12241
Cobalt	0.0000000423	0.00000872	0.0000221	0.0000429	0.0000228	0.0000544	0.0000821	0.00141	12241
Copper	0.000000107	0.0000236	0.0000585	0.000111	0.0000604	0.000144	0.000221	0.00312	12241
Iron	0.000110	0.0247	0.0604	0.115	0.0624	0.148	0.226	3.09	12241
Lead	0.0000000295	0.00000552	0.0000145	0.0000302	0.0000151	0.0000354	0.0000550	0.00123	12241
Magnesium	0.0000220	0.00507	0.0123	0.0234	0.0127	0.0299	0.0461	0.639	12241
Manganese	0.00000239	0.000545	0.00132	0.00253	0.00136	0.00321	0.00489	0.0693	12241
Mercury	0.0000000338	0.00000220	0.0000101	0.0000356	0.0000107	0.0000248	0.0000475	0.00269	12241
Molybdenum	0.000000005	0.00000124	0.00000298	0.00000529	0.00000307	0.00000748	0.0000121	0.000101	12241
Nickel	0.0000000966	0.0000172	0.0000477	0.0000996	0.0000495	0.000117	0.000181	0.00301	12241
Phosphorus	0.00000265	0.000511	0.00137	0.00295	0.00143	0.00325	0.00503	0.0921	12241
Potassium	0.00000458	0.00105	0.00256	0.00487	0.00265	0.00624	0.00969	0.131	12241
Selenium	0.000000001	0.000000171	0.000000620	0.00000182	0.000000653	0.00000142	0.00000235	0.0000677	12241
Sodium	0.00000264	0.000489	0.00125	0.00257	0.00129	0.00308	0.00474	0.112	12241
Strontium	0.000000184	0.0000392	0.0000960	0.000187	0.0000993	0.000232	0.000352	0.00585	12241
Sulfur	0.0000101	0.000893	0.00352	0.0110	0.00371	0.00844	0.0164	0.759	12241
Tellurium	0.000000000	0.0000000296	0.000000111	0.000000363	0.000000117	0.000000251	0.000000419	0.0000138	12241
Thallium	0.0000000824	0.00000657	0.0000400	0.000172	0.0000431	0.0000792	0.000152	0.00557	12241
Thorium	0.000000007	0.00000161	0.00000386	0.00000738	0.00000399	0.00000923	0.0000147	0.000208	12241
Titanium	0.000000701	0.0000567	0.000341	0.00147	0.000367	0.000675	0.00129	0.0473	12241
Tungsten	0.000000000	0.0000000611	0.000000146	0.000000281	0.000000151	0.000000356	0.000000571	0.00000810	12241
Uranium	0.000000002	0.000000361	0.000000892	0.00000184	0.000000925	0.00000209	0.00000323	0.0000580	12241
Vanadium	0.000000216	0.0000475	0.000119	0.000228	0.000123	0.000291	0.000452	0.00604	12241
Zinc	0.000000330	0.0000672	0.000169	0.000353	0.000175	0.000401	0.000620	0.0111	12241

Notes:

St.Dev. = Standard deviation

UCLM = Upper confidence limit of the mean

The model methodology is presented in the Air Quality Modeling Report (S4-C1), Appendix 4.1-A-4.

**Appendix A-4: Predicted Soil Concentrations in Project Case (Operation and Closure)
in mg/kg**

Metal Parameter	Baseline Soil Quality (mg/kg)*	Predicted Dust Deposition (g/m ² year)	Predicted Soil Quality (mg/kg)	
			Incremental Increase in Soil Concentration	Predicted Soil Concentration
	95% UCLM	90th Percentile		
Aluminum	19404	0.0832	62.4	19466
Antimony	0.583	0.00000490	0.00368	0.587
Arsenic	9.24	0.0000485	0.0364	9.28
Barium	254	0.000979	0.734	255
Beryllium	0.471	0	0	0.471
Bismuth	0.164	0.000000496	0.000372	0.164
Boron	3.00	0.0000624	0.0468	3.05
Cadmium	0.462	0.00000261	0.00196	0.464
Calcium	7848	0.272	204	8052
Chromium	24.8	0.000190	0.143	25.0
Cobalt	12.5	0.0000544	0.0408	12.5
Copper	31.4	0.000144	0.108	31.5
Iron	36438	0.148	111	36549
Lead	8.49	0.0000354	0.0265	8.52
Lithium	13.5	0	0	13.5
Magnesium	6799	0.0299	22.5	6821
Manganese	1079	0.00321	2.41	1081
Mercury	0.0562	0.0000248	0.0186	0.0748
Molybdenum	0.846	0.00000748	0.00561	0.852
Nickel	20.8	0.000117	0.0875	20.9
Phosphorus	870	0.00325	2.44	873
Potassium	1025	0.00624	4.68	1029
Selenium	0.177	0.00000142	0.00107	0.178
Silver	0.187	0	0	0.187
Sodium	191	0.00308	2.31	193
Strontium	59.4	0.000232	0.174	59.6
Sulfur	913	0.00844	6.33	919
Tellurium	0.0500	0.000000251	0.000188	0.0502
Thallium	0.0699	0.0000792	0.0594	0.129
Thorium	0.891	0.00000923	0.00692	0.898
Tin	0.451	0	0	0.451
Titanium	497	0.000675	0.506	498
Tungsten	0.100	0.000000356	0.000267	0.100
Uranium	0.554	0.00000209	0.00157	0.556
Vanadium	69.9	0.000291	0.218	70.1
Zinc	108	0.000401	0.301	109

Notes:

* Baseline soil summary statistics based on sites outside of Project footprint (n=30).

Appendix A-10: Baseline Drinking Water Quality for Residential Wells.

Parameter	Units	Detection Limit ¹	Well S	Well K				Well S	Well B	Well R
Date Sampled			8-Apr-2019	26-Jun-2018	19-Sep-2018	23-Jan-2019	8-Apr-2019	23-Jan-2019	24-Jan-2019	14-Mar-2019
ALS Sample ID			L2255482-2	L2120097-1	L2168100-1	L2225129-1	L2255482-1	L2225129-2	L2225129-3	L2245111-2
Physical Tests (Water)										
Color, True	CU	5.0	6.8	7.8	8.4	6.9	38	<5.0	<5.0	<5.0
Conductivity (lab)	uS/cm	2.0	407	292	190	386	335	193	500	425
Conductivity (field)	uS/cm	2.0	440	312	201	444	397	205	553	486
Hardness (as CaCO ₃)	mg/L	0.50	192	134	96.9	201	168	96.2	275	202
pH (lab)	pH	0.10	7.81	7.59	7.99	7.75	7.67	7.54	7.95	8.12
pH (field)	pH	0.10	7.64	6.94	8.1	7.66	7.70	7.41	7.88	8.27
Total Suspended Solids	mg/L	3.0	<3.0	19.1	<3.0	18	17.5	<3.0	<3.0	<3.0
Total Dissolved Solids	mg/L	20	235	186	124	240	188	116	312	244
Turbidity	NTU	0.10	1.16	26.6	3.13	28.6	51.7	0.23	0.16	9.38
Oxidation-reduction potential (field)	mV	-1000.00	+24	-72.0	2	-174	-176	21.0	57.0	-73.0
Anions and Nutrients (Water)										
Acidity (as CaCO ₃)	mg/L	1.0	7.6	9.8	2.6	9.3	6.5	5.0	6.0	2.3
Alkalinity, Bicarbonate (as CaCO ₃)	mg/L	1.0	151	154	109	227	183	66	227	206
Alkalinity, Carbonate (as CaCO ₃)	mg/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO ₃)	mg/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO ₃)	mg/L	1.0	151	154	109	227	183	66	227	206
Ammonia, Total (as N)	mg/L	0.0050	<0.0050	0.221	0.0972	0.201	0.308	<0.0050	<0.0050	0.0238
Bromide (Br)	mg/L	0.050	0.102	<0.050	<0.050	<0.050	<0.050	<0.050	0.151	<0.050
Chloride (Cl)	mg/L	0.50	12.8	0.60	<0.50	0.65	<0.50	<0.50	26.7	1.79
Fluoride (F)	mg/L	1.500	0.067	0.068	0.072	0.070	0.078	0.050	0.060	0.078
Nitrate (as N)	mg/L	0.0050	5.46	<0.0050	0.0207	<0.0050	<0.0050	0.0525	0.962	<0.0050
Nitrite (as N)	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen	mg/L	0.030	5.36	0.467	0.285	0.352	0.436	0.080	0.941	0.051
Orthophosphate-Dissolved (as P)	mg/L	0.0010	<0.0010	0.0021	n.a.	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	mg/L	0.0020	<0.0020	0.197	0.0027	0.0545	0.0536	<0.0020	<0.0020	-
Phosphorus (P)-Total	mg/L	0.0020	0.0030	0.214	0.0156	0.0604	0.0573	<0.0020	<0.0020	<0.0020
Sulfate (SO ₄)	mg/L	0.30	13.6	<0.30	1.16	<0.30	<0.30	32.8	4.81	32.1
Organic / Inorganic Carbon (Water)										
Dissolved Organic Carbon	mg/L	0.50	5.36	4.43	2.94	5.12	3.55	1.94	1.38	0.89
Total Organic Carbon	mg/L	4.00	5.28	4.65	2.69	5.08	3.76	1.66	1.13	0.77

Notes:

¹ Lowest reported detection limit listed

CU = Color Units

uS/cm = micro-Sieverts per centimeter

NTU = nephelometric turbidity units

mg/L = Milligrams per liter

mV = Millivolts

Appendix A-10: Baseline Drinking Water Quality for Residential Wells.

Parameter	Units	Detection Limit ¹	Well S	Well K				Well S	Well B	Well R
Date Sampled			8-Apr-2019	26-Jun-2018	19-Sep-2018	23-Jan-2019	8-Apr-2019	23-Jan-2019	24-Jan-2019	14-Mar-2019
ALS Sample ID			L2255482-2	L2120097-1	L2168100-1	L2225129-1	L2255482-1	L2225129-2	L2225129-3	L2245111-2
Total Metals (Water)										
Aluminum (Al)-Total	mg/L	0.0050	0.0160	0.0109	<0.0050	0.0084	0.0066	<0.0050	<0.0050	<0.0050
Antimony (Sb)-Total	mg/L	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	0.00050	<0.00050	0.0199	0.00157	0.0115	0.00871	<0.00050	<0.00050	0.00059
Barium (Ba)-Total	mg/L	0.020	0.253	0.245	0.155	0.282	0.307	0.057	0.345	0.094
Beryllium (Be)-Total	mg/L	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010
Boron (B)-Total	mg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	0.0000050	0.0000129	0.0000178	0.0000124	0.0000251	0.000018	<0.0000050	<0.0000050	0.0000052
Calcium (Ca)-Total	mg/L	0.10	55.9	39.0	26.9	51.4	48.4	24.2	78.1	54.6
Chromium (Cr)-Total	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	0.00030	<0.00030	0.00233	0.00055	0.00265	0.00293	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0010	0.0648	<0.0010	<0.0010	<0.0010	<0.0010	0.027	0.0033	0.0046
Iron (Fe)-Total	mg/L	0.030	0.159	9.73	0.834	7.28	8.28	0.034	0.045	0.819
Lead (Pb)-Total	mg/L	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00071	0.00104
Lithium (Li)-Total	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	0.0015	0.0035
Magnesium (Mg)-Total	mg/L	0.10	12.2	8.60	6.48	12.0	10.8	5.95	10.3	15.9
Manganese (Mn)-Total	mg/L	0.00030	0.00562	4.45	1.03	6.91	7.02	0.0102	0.00039	0.20900
Mercury (Hg)-Total	mg/L	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.0010	<0.0010	0.0010	<0.0010	0.0023	0.0016	<0.0010	<0.0010	0.0019
Nickel (Ni)-Total	mg/L	0.0010	<0.0010	0.0016	<0.0010	0.0015	0.0015	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	2.0	2.2	2.5	<2.0	2.4	2.1	<2.0	<2.0	<2.0
Selenium (Se)-Total	mg/L	0.000050	0.000091	<0.000050	<0.000050	0.000053	<0.00010	0.000073	0.000075	<0.000050
Silver (Ag)-Total	mg/L	0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	2.0	13.7	4.3	3.7	4.8	4.6	3.5	6.1	14.0
Thallium (Tl)-Total	mg/L	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00021
Vanadium (V)-Total	mg/L	0.00050	<0.00050	0.00173	0.00118	0.00201	0.0012	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.0050	0.0214	0.0778	0.0257	0.0989	0.110	<0.0050	<0.0050	0.0642

Notes:
¹ Lowest reported detection limit listed

CU = Color Units

uS/cm = micro-Sieverts per centimeter

NTU = nephelometric turbidity units

mg/L = Milligrams per liter

mV = Millivolts

Appendix A-10: Baseline Drinking Water Quality for Residential Wells.

Parameter	Units	Detection Limit ¹	Well S	Well K				Well S	Well B	Well R
Date Sampled			8-Apr-2019	26-Jun-2018	19-Sep-2018	23-Jan-2019	8-Apr-2019	23-Jan-2019	24-Jan-2019	14-Mar-2019
ALS Sample ID			L2255482-2	L2120097-1	L2168100-1	L2225129-1	L2255482-1	L2225129-2	L2225129-3	L2245111-2
Dissolved Metals (Water)										
Aluminum (Al)-Dissolved	mg/L	0.0050	<0.0050	0.0072	<0.0050	0.0062	0.0056	<0.0050	<0.0050	<0.0050
Antimony (Sb)-Dissolved	mg/L	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Dissolved	mg/L	0.00050	<0.00050	0.0180	0.00105	0.0116	0.00928	<0.00050	<0.00050	<0.00050
Barium (Ba)-Dissolved	mg/L	0.020	0.258	0.245	0.167	0.318	0.321	0.065	0.376	0.095
Beryllium (Be)-Dissolved	mg/L	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron (B)-Dissolved	mg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Dissolved	mg/L	0.0000050	0.0000077	<0.0000050	0.0000078	0.0000149	0.0000113	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Dissolved	mg/L	0.10	55.8	39.5	27.7	58.6	47.9	27.1	90.3	55.6
Chromium (Cr)-Dissolved	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Dissolved	mg/L	0.00030	<0.00030	0.00223	0.00062	0.00284	0.00299	<0.00030	<0.00030	<0.00030
Copper (Cu)-Dissolved	mg/L	0.0010	0.0504	<0.0010	<0.0010	<0.0010	<0.0010	0.0306	0.0033	<0.0010
Iron (Fe)-Dissolved	mg/L	0.030	0.074	9.10	0.106	7.44	8.32	<0.030	<0.030	0.336
Lead (Pb)-Dissolved	mg/L	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Dissolved	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	0.0036
Magnesium (Mg)-Dissolved	mg/L	0.10	12.9	8.66	6.71	13.3	11.7	6.96	12	15.4
Manganese (Mn)-Dissolved	mg/L	0.00010	0.00580	4.34	1.24	7.46	7.55	0.01	0.00017	0.21200
Mercury (Hg)-Dissolved	mg/L	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.0010	<0.0010	0.0011	<0.0010	0.0024	0.0016	<0.0010	<0.0010	0.0019
Nickel (Ni)-Dissolved	mg/L	0.0010	0.0011	0.0026	<0.0010	0.0012	0.0014	<0.0010	<0.0010	<0.0010
Potassium (K)-Dissolved	mg/L	2.0	2.3	2.4	<2.0	2.5	2.4	<2.0	<2.0	<2.0
Selenium (Se)-Dissolved	mg/L	0.000050	0.000114	<0.000050	0.00014	<0.000050	0.000095	0.000058	<0.000050	0.000055
Silver (Ag)-Dissolved	mg/L	0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Dissolved	mg/L	2.0	13.7	4.3	3.9	5.2	4.8	3.9	6.9	15.2
Thallium (Tl)-Dissolved	mg/L	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Dissolved	mg/L	0.00050	<0.00050	<0.00050	<0.00050	0.00212	<0.00050	0.00281	0.00099	<0.00050
Titanium (Ti)-Dissolved	mg/L	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	mg/L	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00022
Vanadium (V)-Dissolved	mg/L	0.00050	<0.00050	0.00130	0.00072	0.00151	0.00118	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.0050	0.0170	0.0558	0.0222	0.0881	0.0820	<0.0050	<0.0050	0.0298

Notes:
¹ Lowest reported detection limit listed

CU = Color Units

uS/cm = micro-Sieverts per centimeter

NTU = nephelometric turbidity units

mg/L = Milligrams per liter

mV = Millivolts

Table x: Baseline and Project Case Drinking-water Quality for Residential Wells, Drinking Water Guidelines, and Screening for Contaminants of Potential Concern.

Parameter	Units	Detection Limit ¹	BC Approved WQOE Drinking Water Sources - Maximum Acceptable Concentration	Guidelines for Canadian Drinking Water - Maximum Acceptable Concentration	US EPA Regional Screening Levels, Resident Tapwater (Dermal SL, TH-1E-06, THQ-0.1)	SHEARER	KERR				SCHMIKE	BEUKEMA	RAGULA
Client Sample ID						SHEARER	KERR	KERR	KERR	KERR 0419	SCHMIKE	BEUKEMA	RAGULA
Date Sampled						8-Apr-2019	26-Jun-2018	19-Sep-2018	23-Jan-2019	8-Apr-2019	23-Jan-2019	24-Jan-2019	14-Mar-2019
AIS Sample ID						L2255482-2	L2120097-1	L2168100-1	L2225129-1	L2255482-1	L2225129-2	L2225129-3	L2245111-2
Physical Tests (Water)													
Color, True	CU	5.0	15 ND	<15 ND	n.g.	6.8	7.8	8.4	6.9	38	<5.0	<5.0	<5.0
Conductivity (lab)	uS/cm	2.0	n.g.	n.g.	n.g.	407	292	190	386	335	193	500	425
Conductivity (field)	uS/cm	2.0	n.g.	n.g.	n.g.	440	312	201	444	397	205	553	486
Hardness (as CaCO3)	mg/L	0.50	n.g.	n.g.	n.g.	152	134	96.9	201	168	96.2	275	202
pH (lab)	pH	0.10	n.g.	7.50-5	n.g.	7.81	7.58	7.99	7.75	7.67	7.54	7.95	8.12
pH (field)	pH	0.10	n.g.	7.50-5	n.g.	7.64	6.94	8.1	7.66	7.70	7.41	7.88	8.27
Total Suspended Solids	mg/L	3.0	n.g.	n.g.	n.g.	<5.0	59.1	<3.0	18	17.5	<3.0	<3.0	<3.0
Total Dissolved Solids	mg/L	20	n.g.	<200 ND	n.g.	235	386	124	249	388	116	312	244
Turbidity	NTU	0.10	compare to background	≤ 0.1 to < 2 (treatment limits)	n.g.	1.16	26.6	3.13	28.6	51.7	0.23	0.16	9.38
Oxidation-reduction potential (field)	mV	-1000.00	n.g.	n.g.	n.g.	+24	-72.0	2	-174	-176	21.0	57.0	-73.0
Anions and Nutrients (Water)													
Acidity (as CaCO3)	mg/L	1.0	n.g.	n.g.	n.g.	7.6	9.8	2.6	9.3	6.5	5.0	6.0	2.3
Alkalinity, Bicarbonate (as CaCO3)	mg/L	1.0	n.g.	n.g.	n.g.	151	154	109	227	183	66	227	206
Alkalinity, Carbonate (as CaCO3)	mg/L	1.0	n.g.	n.g.	n.g.	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3)	mg/L	1.0	n.g.	n.g.	n.g.	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	1.0	n.g.	n.g.	n.g.	151	154	109	227	183	66	227	206
Ammonia, Total (as N)	mg/L	0.0050	n.g.	n.g.	n.g.	<0.0050	0.221	0.0972	0.201	0.308	<0.0050	<0.0050	0.0238
Bromide (Br)	mg/L	0.050	n.g.	n.g.	n.g.	0.102	<0.050	<0.050	<0.050	<0.050	0.151	<0.050	<0.050
Chloride (Cl)	mg/L	0.50	250 ND	250 ND	n.g.	12.8	0.60	<0.50	0.65	<0.50	26.7	1.79	1.79
Fluoride (F)	mg/L	1.500	1.5 ND	1.5 ND	18	0.067	0.068	0.072	0.070	0.078	0.050	0.060	0.078
Nitrate (as N)	mg/L	0.0050	10 ND	10 ND	720	5.46	<0.0050	0.0207	<0.0050	<0.0050	0.0525	0.962	<0.0050
Nitrite (as N)	mg/L	0.0010	1 ND	1 ND	46	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen	mg/L	0.030	n.g.	n.g.	n.g.	5.36	0.467	0.285	0.352	0.436	0.080	0.941	0.051
Orthophosphate-Dissolved (as P)	mg/L	0.0010	n.g.	n.g.	n.g.	<0.0010	0.0021	n.a.	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	mg/L	0.0010	n.g.	n.g.	n.g.	<0.0010	0.197	0.0077	0.0445	0.0136	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0020	0.01 (lake) ND	n.g.	n.g.	0.0030	0.214	0.0156	0.0604	0.0573	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	mg/L	0.30	500 ND	500 ND	n.g.	13.6	<0.30	1.16	<0.30	<0.30	32.8	4.81	32.1
Organic / Inorganic Carbon (Water)													
Dissolved Organic Carbon	mg/L	0.50	n.g.	n.g.	n.g.	5.36	4.43	2.94	5.12	3.55	1.94	1.38	0.89
Total Organic Carbon	mg/L	4.00	4 ND	n.g.	n.g.	5.28	4.65	2.69	5.08	3.76	1.66	1.13	0.77
Total Metals (Water)													
Aluminum (Al)-Total	mg/L	0.0050	9.1 ND	≤ 9.1 ND	460	0.0160	0.0109	<0.0050	0.0084	0.0066	<0.0050	<0.0050	<0.0050
Antimony (Sb)-Total	mg/L	0.00050	0.006	0.006 ND	0.027	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	0.00050	0.01	0.01 ND	0.0097	<0.00050	0.0099	0.00157	0.0015	0.00871	<0.00050	0.00050	0.00059
Barium (Ba)-Total	mg/L	0.020	n.g.	1 ND	6.4	0.253	0.245	0.155	0.282	0.307	0.057	0.345	0.094
Beryllium (Be)-Total	mg/L	0.00010	n.g.	n.g.	n.g.	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron (B)-Total	mg/L	0.10	2 ND	2 ND	91	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	0.0000050	0.005 ND	0.005 ND	0.011	0.0000129	0.0000178	0.0000124	0.0000251	0.0000018	<0.0000050	<0.0000050	0.0000052
Calcium (Ca)-Total	mg/L	0.10	n.g.	n.g.	n.g.	55.9	39.0	26.9	51.4	48.4	24.2	78.1	54.6
Chromium (Cr)-Total	mg/L	0.0010	0.06	0.05 ND	0.00012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	0.00030	0.001	n.g.	0.14	<0.00030	0.00213	0.00055	0.00265	0.00293	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0010	2 ND	2 ND	18	0.0648	<0.0010	<0.0010	<0.0010	<0.0010	0.027	0.0033	0.0046
Iron (Fe)-Total	mg/L	0.030	0.3 ND	0.3 ND	320	0.159	9.73	0.834	7.28	8.28	0.034	0.045	0.819
Lead (Pb)-Total	mg/L	0.00050	0.005	0.005 ND	1.7	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00071	0.00104
Lithium (Li)-Total	mg/L	0.0010	n.g.	n.g.	0.91	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	0.0035
Magnesium (Mg)-Total	mg/L	0.10	n.g.	n.g.	n.g.	12.2	8.60	6.48	12.0	10.8	5.95	10.3	15.9
Manganese (Mn)-Total	mg/L	0.00030	0.12	0.12 ND	0.44	0.00562	4.45	1.03	6.91	7.02	0.0102	0.00039	0.20900
Mercury (Hg)-Total	mg/L	0.0000050	0.001 ND	0.001 ND	0.0096	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.0010	0.089	n.g.	2.2	<0.0010	0.0010	<0.0010	0.0012	0.0016	<0.0010	<0.0010	0.0019
Nickel (Ni)-Total	mg/L	0.0010	0.08	n.g.	1.8	<0.0010	0.0016	<0.0010	0.0015	0.0015	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	2.0	n.g.	n.g.	n.g.	2.2	2.5	<2.0	2.4	2.1	<2.0	<2.0	<2.0
Selenium (Se)-Total	mg/L	0.000050	0.01 ND	0.05 ND	2.3	0.000091	<0.000050	<0.000050	0.000051	<0.00010	0.000073	0.000075	<0.000050
Silver (Ag)-Total	mg/L	0.000020	n.g.	n.g.	0.15	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	2.0	n.g.	200 ND	n.g.	13.7	4.3	3.7	4.8	4.6	3.5	6.1	14.0
Thallium (Tl)-Total	mg/L	0.000010	n.g.	n.g.	0.0046	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	0.00050	n.g.	n.g.	270	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	0.010	n.g.	n.g.	n.g.	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.00020	0.02	0.02 ND	0.091	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00021	0.00021
Vanadium (V)-Total	mg/L	0.00050	n.g.	n.g.	0.06	<0.00050	0.00173	0.00118	0.00201	0.0012	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.050	3	≤ 5.0 ND	230	0.0214	0.0778	0.0257	0.0989	0.110	<0.0050	<0.0050	0.0644

Parameter	Units	Detection Limit ¹	BC Approved WQGS Drinking Water Sources - Maximum Acceptable Concentration	Guidelines for Canadian Drinking Water - Maximum Acceptable Concentration	US EPA Regional Screening Levels, Resident Tapwater (Dermal SL, TR-1E-06, THQ-0.1) ²	SHEARER	KERR				SCHMKE	BEUKEMA	RAGULA	
Dissolved Metals (Water)														
Aluminum (Al)-Dissolved	mg/L	0.0050	n.g.	n.g.	n.g.	<0.0050	0.0072	<0.0050	0.0062	0.0056	<0.0050	<0.0050	<0.0050	
Antimony (Sb)-Dissolved	mg/L	0.00050	n.g.	n.g.	n.g.	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Arsenic (As)-Dissolved	mg/L	0.00050	n.g.	n.g.	n.g.	<0.00050	0.0180	0.00105	0.0116	0.00928	<0.00050	<0.00050	<0.00050	
Barium (Ba)-Dissolved	mg/L	0.020	n.g.	n.g.	n.g.	0.258	0.245	0.167	0.318	0.321	0.065	0.376	0.095	
Beryllium (Be)-Dissolved	mg/L	0.000010	n.g.	n.g.	n.g.	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Boron (B)-Dissolved	mg/L	0.10	n.g.	n.g.	n.g.	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Cadmium (Cd)-Dissolved	mg/L	0.000050	n.g.	n.g.	n.g.	0.000077	<0.000050	0.000078	0.000149	0.000113	<0.000050	<0.000050	<0.000050	
Calcium (Ca)-Dissolved	mg/L	0.10	n.g.	n.g.	n.g.	55.8	39.5	27.7	58.6	47.9	27.1	90.3	55.6	
Chromium (Cr)-Dissolved	mg/L	0.0010	n.g.	n.g.	n.g.	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Cobalt (Co)-Dissolved	mg/L	0.00030	n.g.	n.g.	n.g.	<0.00030	0.00023	0.00062	0.00284	0.00299	<0.00030	<0.00030	<0.00030	
Copper (Cu)-Dissolved	mg/L	0.0010	n.g.	n.g.	n.g.	0.0594	<0.0010	<0.0010	<0.0010	<0.0010	0.0026	0.0033	<0.0010	
Iron (Fe)-Dissolved	mg/L	0.030	n.g.	n.g.	n.g.	0.074	5.10	0.106	7.44	8.32	<0.030	<0.030	0.336	
Lead (Pb)-Dissolved	mg/L	0.00050	n.g.	n.g.	n.g.	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Lithium (Li)-Dissolved	mg/L	0.0010	n.g.	n.g.	n.g.	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	0.0016		
Magnesium (Mg)-Dissolved	mg/L	0.10	n.g.	n.g.	n.g.	12.9	8.66	6.71	13.3	11.7	6.96	12	15.4	
Manganese (Mn)-Dissolved	mg/L	0.000010	n.g.	n.g.	n.g.	0.00580	4.34	1.24	7.46	7.55	0.01	0.00017	0.21200	
Mercury (Hg)-Dissolved	mg/L	0.000050	n.g.	n.g.	n.g.	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Molybdenum (Mo)-Dissolved	mg/L	0.0010	n.g.	n.g.	n.g.	<0.0010	0.0011	<0.0010	0.0024	0.0016	<0.0010	<0.0010	0.0019	
Nickel (Ni)-Dissolved	mg/L	0.0010	n.g.	n.g.	n.g.	0.0011	0.0026	<0.0010	0.0012	0.0014	<0.0010	<0.0010	<0.0010	
Potassium (K)-Dissolved	mg/L	2.0	n.g.	n.g.	n.g.	2.3	2.4	<2.0	2.5	2.4	<2.0	<2.0	<2.0	
Selenium (Se)-Dissolved	mg/L	0.000050	n.g.	n.g.	n.g.	0.000114	<0.000050	0.00014	<0.00050	0.000095	0.000058	<0.000050	0.000050	
Silver (Ag)-Dissolved	mg/L	0.000020	n.g.	n.g.	n.g.	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	
Sodium (Na)-Dissolved	mg/L	2.0	n.g.	n.g.	n.g.	13.7	4.3	3.9	5.2	4.8	3.9	6.9	15.2	
Thallium (Tl)-Dissolved	mg/L	0.00020	n.g.	n.g.	n.g.	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Tin (Sn)-Dissolved	mg/L	0.00050	n.g.	n.g.	n.g.	<0.00050	<0.00050	<0.00050	0.00012	<0.00050	0.00261	0.00069	<0.00050	
Titanium (Ti)-Dissolved	mg/L	0.010	n.g.	n.g.	n.g.	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Dissolved	mg/L	0.00020	n.g.	n.g.	n.g.	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00022	
Vanadium (V)-Dissolved	mg/L	0.00050	n.g.	n.g.	n.g.	<0.00050	0.00130	0.00072	0.00118	0.00118	<0.00050	<0.00050	<0.00050	
Zinc (Zn)-Dissolved	mg/L	0.0050	n.g.	n.g.	n.g.	0.0170	0.0538	0.0222	0.0881	0.0820	<0.0050	<0.0050	0.0298	

Notes

Shaded Concentration exceeds BC Approved WQG - Drinking Water Sources

Shaded Concentration exceeds Guidelines for Canadian Drinking Water - Maximum Acceptable Concentration

Bolded and bordered Concentration exceeds a health-based guideline

¹ Lowest reported detection limit listed

² The lower of the carcinogenic or non-carcinogenic dermal screening level is shown.

CU Color Units

µf/cm micro-Sewerts per centimeter

NTU nephelometric turbidity units

mg/L Milligrams per liter

m/L Milliliters

AO Aesthetic Objective established for parameters that may impair the taste, smell, or color of water; or which may interfere with the supply of good quality water. They do not cause adverse health effects.

MAC Maximum acceptable concentration (health-based)

OG Operational guideline (not health-based)

ALARA as low as reasonably achievable

n.g. no guideline

n.a. not analyzed

Sources:

British Columbia Ministry of Environment, 2017. B.C. Source Drinking Water Quality Guidelines: Guideline Summary. Water Quality Guideline Series, WQG-01. Prov. B.C., Victoria B.C.

Health Canada, 2017. Guidelines for Canadian Drinking Water Quality—Summary Table. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.

Appendix A-5: Baseline Soil and Vegetation Tissue Samples for the Calculation of Soil-to-Plant Bioconcentration Factors

	LAB ID	Common Name	Sample Type	Sample Date	UTM_E	UTM_N	Area	Moisture	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
Units:								% wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet
MDL:								1	0.4	0.002	0.005	0.01	0.002	0.02	0.2	0.002	2	0.01	0.004	0.01	1	0.004
Sample ID																						
TC-001	7082434-01		SOIL	2017-07-25	629904	6057772	Rail		13700.00	0.25	2.65	218.00	0.31	0.10	6.40	0.93	9170.00	19.60	8.24	20.10	23400.00	7.77
TC-002	7082434-02		SOIL	2017-07-25	629904	6057772	Rail		13400.00	0.40	5.83	114.00	0.30	0.05	2.80	0.19	5130.00	22.00	9.56	12.80	29200.00	7.24
Average of TC-001 and TC-002			SOIL						13550	0.325	4.24	166	0.305	0.075	4.6	0.5605	7150	20.8	8.9	16.45	26300	7.505
TC-V-001	8121526-01	Soopolallie	Berries	2017-07-24	629904	6057772	Loadout	71.3	2.73	0.002	0.0025	0.962	0.001	0.01	4.27	0.0064	371	0.022	0.002	1.04	12	0.002
TC-V-032	8121526-31	Black Gooseberry	Berries	2017-07-24	629834	6057796	Loadout	80.8	0.2	0.001	0.0025	0.07	0.001	0.01	0.1	0.001	31.9	0.005	0.002	0.031	0.5	0.002
TC-V-145	9090871-69	Highbush Cranberry	Berries	2019-09-07	629764	6057736	Bypass Rd	86	1.3	0.001	0.0025	1.67	0.001	0.01	1.71	0.0075	252	0.005	0.002	0.322	3	0.002
TC-013	7082434-13		SOIL	2017-07-25	630203	6058465	Rail		15100.00	0.62	9.60	189.00	0.41	0.05	2.80	0.23	4970.00	25.00	12.30	24.30	34300.00	8.24
TC-V-033	8121526-32	Soopolallie	Berries	2017-07-24	630203	6058465	Loadout	75.3	0.2	0.001	0.0025	0.103	0.001	0.01	0.26	0.001	21.5	0.005	0.002	0.062	0.5	0.002
TC-007	7082434-07		SOIL	2017-07-26	616577	6050085	Pit		14000.00	0.54	6.83	172.00	0.34	0.10	3.10	0.22	3950.00	22.80	10.20	13.10	32400.00	7.71
TC-V-004	8121526-03	Scouler's Willow	Leaves/Stems	2017-07-26	616577	6050085	Pit	83.9	0.2	0.001	0.0025	2.66	0.001	0.01	3.98	0.125	907	0.005	0.131	0.888	7.1	0.002
TC-009	7082434-09		SOIL	2017-07-26	616083	6051053	Pit		20100.00	0.50	8.55	334.00	0.57	0.11	3.50	0.48	10500.00	25.60	13.70	28.00	35300.00	7.67
TC-V-007	8121526-06	Subalpine Fir	Leaves/Stems	2017-07-26	616083	6051053	Pit	69.2	1.85	0.001	0.0025	14	0.001	0.01	4.82	0.0053	1210	0.005	0.002	1.64	7.2	0.002
TC-074	9090720-20		SOIL	2019-08-09	619475	6054510	Pit		15200	0.39	8.83	176	0.46	0.15	1	0.201	1970	25	17.6	23.2	34500	8.07
TC-V-102	9090871-27	Black Cottonwood	Leaves/Stems	2019-08-09	619475	6054510	Pit	63.5	3.26	0.001	0.0175	15.5	0.001	0.01	10.5	0.303	5110	0.141	0.217	2.11	13.8	0.0046
TC-V-103	9090871-28	Black Twinberry	Leaves/Stems	2019-08-09	619475	6054510	Pit	72	4.02	0.001	0.0025	10.5	0.001	0.01	3.97	0.0082	2180	0.042	0.0103	1.32	10.4	0.002
TC-V-104	9090871-29	Common Horsetail	Leaves/Stems	2019-08-09	619475	6054510	Pit	79	5.89	0.001	0.0265	16.3	0.001	0.01	6.55	0.0229	5610	0.35	0.0376	1.27	24.7	0.0047
TC-V-105	9090871-30	Prickly Rose	Leaves/Stems	2019-08-09	619475	6054510	Pit	64.4	3.37	0.001	0.007	23.2	0.001	0.01	7.99	0.0049	4850	0.053	0.0064	1.45	16.5	0.0042
TC-075	9090720-21		SOIL	2019-08-09	618451	6054525	Pit		16500	0.46	7.88	141	0.33	0.11	1	0.06	1910	22	8.95	14.8	31400	6.74
TC-V-110	9090871-35	Black Twinberry	Leaves/Stems	2019-08-09	618451	6054525	Pit	73.3	4.5	0.001	0.0025	25.8	0.001	0.01	1.87	0.004	4050	0.123	0.0094	0.938	13.1	0.002
TC-V-111	9090871-36	Fireweed	Leaves/Stems	2019-08-09	618451	6054525	Pit	80	5.2	0.001	0.0083	5.15	0.001	0.01	1.67	0.001	3020	0.113	0.002	0.965	13.1	0.002
TC-V-112	9090871-37	Prickly Rose	Leaves/Stems	2019-08-09	618451	6054525	Pit	74.1	2.41	0.001	0.0062	12.8	0.001	0.01	4.67	0.0031	4900	0.05	0.002	0.862	12	0.002
TC-V-153	9100459-25	Western-mountain Ash	Leaves/Stems	2019-08-09	618451	6054525	Pit	73.6	2.93	0.001	0.0059	36.9	0.001	0.01	2.59	0.0181	3570	0.015	0.0111	0.901	11.7	0.0054
TC-029	7082434-29		SOIL	2017-07-27	617192	6049953	Pit		18300.00	0.66	8.27	119.00	0.40	0.12	2.60	0.12	1300.00	23.40	8.45	18.70	36400.00	8.04
TC-V-040	8121526-39	Fireweed	Leaves/Stems	2017-07-27	617192	6049953	Pit	73.2	0.65	0.001	0.0025	1.43	0.001	0.01	0.25	0.001	147	0.005	0.002	0.069	0.5	0.002
TC-031	7082434-31		SOIL	2017-07-28	617975	6049913	Pit		16600.00	0.64	7.66	144.00	0.33	0.14	2.30	0.09	1730.00	20.80	7.47	20.30	34200.00	6.55
TC-V-043	8121526-42	Subalpine Fir	Leaves/Stems	2017-07-28	617975	6049913	Pit	63.1	1.31	0.001	0.0025	1	0.001	0.01	0.24	0.001	63.5	0.005	0.002	0.051	0.5	0.002
TC-057	9090720-09		SOIL	2019-07-15	629080	6057788	Bypass Rd		11500	0.32	4.11	167	0.22	0.13	3	0.165	2970	15.1	10	17	35000	7.11
TC-V-051	9090871-01	Alder	Leaves/Stems	2019-07-15	629080	6057788	Bypass Rd	70.2	1.4	0.001	0.0025	27.2	0.001	0.01	8.68	0.0837	2250	0.017	0.055	2.29	12.6	0.0041
TC-V-052	9090871-02	Scouler's Willow	Leaves/Stems	2019-07-15	629080	6057788	Bypass Rd	66.1	1.22	0.001	0.0025	6.7	0.001	0.01	7.22	0.229	3520	0.029	0.0353	1.72	10.1	0.002
TC-058	9090720-10		SOIL	2019-07-15	628288	6057476	Bypass Rd		18700	0.29	9.31	144	0.46	0.17	2.3	0.191	3520	23.4	10.2	26.3	30800	9.74
TC-V-053	9090871-03	Common Horsetail	Leaves/Stems	2019-07-15	628288	6057476	Bypass Rd	79.2	1.21	0.001	0.0025	13	0.001	0.01	4.57	0.0288	2540	0.275	0.0354	1.17	9.8	0.002
TC-059	9090720-11		SOIL	2019-07-16	627518	6057263	Bypass Rd		25100	0.32	13.2	262	0.75	0.27	2.4	0.383	3820	33.6	16.5	32.4	47200	11.8
TC-V-054	9090871-04	Black Cottonwood	Leaves/Stems	2019-07-16	627518	6057263	Bypass Rd	68.9														

Appendix A-5: Baseline Soil and Vegetation Tissue Samples for the Calculation of Soil-to-Plant Bioconcentration Factors

	LAB ID	Common Name	Sample Type	Sample Date	UTM_E	UTM_N	Area	Moisture	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
Units:								% wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet
MDL:								1	0.4	0.002	0.005	0.01	0.002	0.02	0.2	0.002	2	0.01	0.004	0.01	1	0.004
Sample ID																						
TC-065	9100455-02		SOIL	2019-08-08	620695	6058460	Pipeline		13700	0.69	9.7	170	0.33	0.21	2.7	0.286	5650	24.4	14.5	34.3	43100	8.18
TC-V-067	9100459-04	Common Horsetail	Leaves/Stems	2019-08-08	620695	6058460	Pipeline	83.2	18.3	0.001	0.0452	10.2	0.001	0.01	3.75	0.0153	5400	0.122	0.137	1.49	54.8	0.0131
TC-V-068	9100459-05	Cow Parsnip	Leaves/Stems	2019-08-08	620695	6058460	Pipeline	64.6	3.43	0.001	0.0062	4.72	0.001	0.01	12.1	0.0136	4270	0.029	0.0287	2.7	28.7	0.0063
TC-V-069	9100459-06	Red Osier Dogwood	Leaves/Stems	2019-08-08	620695	6058460	Pipeline	73.6	2.24	0.001	0.0025	16.3	0.001	0.01	5.06	0.001	5250	0.026	0.0081	0.815	14.7	0.0052
TC-066	9100455-03		SOIL	2019-08-08	620370	6053828	Pipeline		12800	0.55	7.65	370	0.26	0.35	1	0.587	4220	24.1	11.5	18.1	34200	9.05
TC-V-075	9100459-12	Black Twinberry	Leaves/Stems	2019-08-08	620370	6053828	Pipeline	68.4	33.8	0.0025	0.0357	63.5	0.001	0.01	3.16	0.0301	4400	0.36	0.0363	1.49	72.4	0.0241
TC-V-076	9100459-13	Common Horsetail	Leaves/Stems	2019-08-08	620370	6053828	Pipeline	82.4	2.18	0.001	0.0058	11.1	0.001	0.01	5.71	0.0725	5740	0.103	0.0265	0.998	13.1	0.0057
TC-V-077	9100459-14	Cow Parsnip	Leaves/Stems	2019-08-08	620370	6053828	Pipeline	52.9	2.23	0.001	0.0056	15	0.001	0.01	12.1	0.008	5400	0.016	0.0433	4.49	36	0.0057
TC-V-078	9100459-15	Fireweed	Leaves/Stems	2019-08-08	620370	6053828	Pipeline	85.3	1.45	0.001	0.0025	16	0.001	0.01	3.81	0.001	2510	0.015	0.002	1.19	16.7	0.002
TC-V-079	9100459-16	Tea-leafed Willow	Leaves/Stems	2019-08-08	620370	6053828	Pipeline	72.4	1.22	0.001	0.0055	14.7	0.001	0.01	6.48	0.316	2980	0.016	0.0857	1.53	14.8	0.0043
TC-072	9100455-06		SOIL	2019-08-09	620396	6054621	Pipeline		15900	0.77	10.9	214	0.36	0.33	3.5	0.407	6570	26.4	14.2	32.1	47600	8.17
TC-V-094	9100459-19	Black Twinberry	Leaves/Stems	2019-08-09	620396	6054621	Pipeline	68.6	23.6	0.001	0.0274	27.4	0.001	0.01	7.35	0.0118	4240	0.271	0.0245	1.65	57.3	0.0392
TC-V-095	9100459-20	Cow Parsnip	Leaves/Stems	2019-08-09	620396	6054621	Pipeline	57.6	106	0.0051	0.129	29.1	0.0028	0.01	15.1	0.0184	5930	0.304	0.112	3.1	219	0.06
TC-V-096	9100459-21	Fireweed	Leaves/Stems	2019-08-09	620396	6054621	Pipeline	80.2	22.3	0.001	0.0195	12.6	0.001	0.01	3.09	0.001	2880	0.096	0.0175	1.54	51	0.0144
TC-V-097	9100459-22	Western-mountain Ash	Leaves/Stems	2019-08-09	620396	6054621	Pipeline	67.1	23.6	0.0021	0.0248	49.9	0.001	0.01	4.22	0.0159	5510	0.244	0.0235	1.84	61	0.0207
TC-073	9090720-19		SOIL	2019-08-09	620210	6053946	Pipeline		18600	0.7	11.3	143	0.45	0.22	2.8	0.382	5990	28.4	14.6	38.5	35400	8.59
TC-V-098	9090871-23	Common Horsetail	Leaves/Stems	2019-08-09	620210	6053946	Pipeline	82.1	17.4	0.001	0.0881	9.83	0.001	0.01	4	0.0081	4630	0.191	0.0403	1.29	49	0.0113
TC-V-099	9090871-24	Cow Parsnip	Leaves/Stems	2019-08-09	620210	6053946	Pipeline	63.9	22.5	0.001	0.0342	7.17	0.001	0.01	12.2	0.0102	4130	0.068	0.0452	4.04	55.6	0.0121
TC-V-100	9090871-25	Fireweed	Leaves/Stems	2019-08-09	620210	6053946	Pipeline	81	4.41	0.001	0.009	5.21	0.001	0.01	7.43	0.001	2590	0.031	0.0059	1.72	21.9	0.0043
TC-V-101	9090871-26	Tea-leafed Willow	Leaves/Stems	2019-08-09	620210	6053946	Pipeline	71.1	1.72	0.001	0.0025	6.81	0.001	0.01	8.27	0.518	4380	0.023	0.0697	1.28	14.7	0.002
IR214	9061368-02		SOIL	2019-06-13	623524	6056004	Bypass		14900.00	0.51	10.50	138.00	0.41	0.12	2.30	0.23	3370.00	23.50	11.80	20.50	36000.00	9.10
TC-V-134	9090871-59	Highbush Cranberry	Berries	2019-08-30	623653	6056021	Bypass Rd	80.6	0.68	0.001	0.0025	2.53	0.001	0.01	1.99	0.0044	331	0.005	0.002	0.822	4	0.002
TC-076	9090720-22		SOIL	2019-08-09	618442	6050681	Pit		17200	0.6	10.5	123	0.33	0.12	1	0.207	1780	22.6	9.02	16.6	37600	7.29
TC-V-116	9090871-41	Red Raspberry	Berries	2019-08-09	618442	6050681	Pit	82.7	0.2	0.001	0.0025	2.21	0.001	0.01	2.85	0.0286	315	0.005	0.0107	0.675	5.6	0.002
TC-069	9090720-17		SOIL	2019-08-08	617613	6051109	Pit		19000	0.45	10.5	199	0.42	0.18	1	0.189	1850	25.1	13.7	18.1	37500	9.38
TC-V-086	9090871-18	Highbush Cranberry	Berries	2019-08-08	617613	6051109	Pit	85.8	0.99	0.001	0.0025	3.67	0.001	0.01	2.5	0.0027	341	0.005	0.002	0.544	2	0.002
TC-V-088	9090871-20	Red Raspberry	Berries	2019-08-08	617613	6051109	Pit	76.5	0.2	0.001	0.0025	2.37	0.001	0.01	3.37	0.0289	410	0.005	0.0069	0.877	8.3	0.002
TC-011	7082434-11		SOIL	2017-07-27	617680	6052553	Pit		18000.00	0.51	9.03	162.00	0.38	0.10	2.30	0.11	1830.00	21.90	8.06	19.40	32800.00	7.89
TC-V-138	9090871-63	Highbush Cranberry	Berries	2019-09-07	617717	6052435	Pit	84.8	0.2	0.001	0.0025	2.77	0.001	0.01	1.79	0.0024	263	0.005	0.002	0.407	2.4	0.002
TC-V-049	8121526-48	Black Huckleberry	Berries	2018-08-07	617523	6052478	Pit	86.3	0.2	0.001	0.0025	0.042	0.001	0.01	0.1	0.001	5.6	0.005	0.002	0.026	0.5	0.002
TC-010	7082434-10		SOIL	2017-07-26	616390	6051025	Pit		14200.00	0.75	7.95	217.00	0.42	0.11	3.30	0.32	4580.00	20.00	11.90	17.70	37500.00	8.94
TC-V-008	8121526-07	Black Twinberry	Berries	2017-07-26	616390	6051025	Pit	81.8	0.2	0.001	0.0025	3.4	0.001	0.01	2.03	0.0057	516	0.005	0.002	1.21	5.5	0.002
TC-068	9090720-16		SOIL	2019-08-08	617555	6051713	Pit		9680	0.42	7.06	154	0.19	0.14	2.3	0.698	2530	16.9	8.13	8.37	30800	7.32
TC-V-030	8121526-29	Devils Club	Berries	2018-08-17	617462	6051761	Pit	74.7	0.2	0.001	0.0025	0.252	0.001	0.01	0.28	0.001	37.2	0.005	0.002	0.12	0.5	0.002

Notes:
Bold numbers represent 1/2 the method detection limit (MDL).

Appendix A-5: Baseline Soil and Vegetation Tissue Samples for the Calculation of Soil-to-Plant Bioconcentration Factors

Units: MDL:	LAB ID	Common Name	Sample Type	Sample Date	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc
					mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet
						2	0.02	0.002	0.01	0.01	5	10	0.02	0.01	2	0.01	0.001	0.02	0.05	0.001	0.02	0.1
Sample ID																						
TC-001	7082434-01		SOIL	2017-07-25	10.60	5520.00	784.00	0.02	0.66	14.00	1700.00	2070.00	0.23	0.18	128.00	63.30	0.05	0.36	500.00	0.26	41.50	182.00
TC-002	7082434-02		SOIL	2017-07-25	12.40	5890.00	466.00	0.02	0.39	13.80	965.00	1090.00	0.10	0.05	149.00	34.40	0.05	0.37	693.00	0.33	59.90	69.90
Average of TC-001 and TC-002			SOIL		11.5	5705	625	0.02	0.525	13.9	1332.5	1580	0.165	0.115	138.5	48.85	0.05	0.365	596.5	0.293	50.7	125.95
TC-V-001	8121526-01	Soopolallie	Berries	2017-07-24		179	3.93	0.001	0.997	0.595	790	3520	0.059	0.005	1	1.94	0.0005	0.01	0.19	0.0005	0.01	3.38
TC-V-032	8121526-31	Black Gooseberry	Berries	2017-07-24		10.7	0.084	0.001	0.005	0.005	36.8	187	0.01	0.005	1	0.138	0.0005	0.01	0.025	0.0005	0.01	0.13
TC-V-145	9090871-69	Highbush Cranberry	Berries	2019-09-07		150	0.262	0.001	0.015	0.016	239	1450	0.01	0.005	3.4	1.53	0.0005	0.01	0.063	0.0005	0.01	1.24
TC-013	7082434-13		SOIL	2017-07-25	11.70	6850.00	925.00	0.02	0.54	19.10	858.00	806.00	0.10	0.05	195.00	33.40	0.05	0.39	649.00	0.35	71.90	95.70
TC-V-033	8121526-32	Soopolallie	Berries	2017-07-24		9.6	0.255	0.001	0.029	0.058	41.2	133	0.01	0.005	1	0.086	0.0005	0.01	0.025	0.0005	0.01	0.22
TC-007	7082434-07		SOIL	2017-07-26	15.10	6220.00	841.00	0.02	0.41	18.00	288.00	465.00	0.10	0.16	135.00	36.10	0.05	0.44	532.00	0.28	63.80	68.00
TC-V-004	8121526-03	Scouler's Willow	Leaves/Stems	2017-07-26		287	8.39	0.001	0.036	0.908	1400	5110	0.01	0.005	2.1	4.2	0.0005	0.01	0.064	0.0005	0.01	16.6
TC-009	7082434-09		SOIL	2017-07-26	20.50	5900.00	1320.00	0.07	0.52	24.20	697.00	658.00	0.10	0.32	162.00	82.60	0.05	0.42	136.00	0.39	60.20	69.00
TC-V-007	8121526-06	Subalpine Fir	Leaves/Stems	2017-07-26		420	36.8	0.0029	0.016	0.261	835	4180	0.01	0.005	1	4.57	0.0013	0.01	0.073	0.0005	0.01	16.4
TC-074	9090720-20		SOIL	2019-08-09		4710	1200	0.044	0.6	26.3	342	614	0.1	0.05	97	22.8	0.05	0.45	73.5	0.273	58.9	86.4
TC-V-102	9090871-27	Black Cottonwood	Leaves/Stems	2019-08-09		1510	42.7	0.001	0.107	1.52	1270	5950	0.033	0.005	1	42.5	0.0005	0.01	0.166	0.0005	0.01	64.9
TC-V-103	9090871-28	Black Twinberry	Leaves/Stems	2019-08-09		840	8.71	0.001	0.276	1.66	1160	8100	0.01	0.005	1	16.9	0.0005	0.01	0.133	0.0005	0.01	7.27
TC-V-104	9090871-29	Common Horsetail	Leaves/Stems	2019-08-09		1760	19.4	0.0028	0.275	0.158	323	7710	0.266	0.005	10.4	41.7	0.0005	0.01	0.2	0.0005	0.01	4.42
TC-V-105	9090871-30	Prickly Rose	Leaves/Stems	2019-08-09		1590	56.1	0.0023	0.396	0.31	2050	5930	0.054	0.005	1	43.8	0.0005	0.01	0.234	0.0005	0.01	3.93
TC-075	9090720-21		SOIL	2019-08-09		5660	473	0.02	0.68	18	260	694	0.1	0.05	130	27.2	0.05	0.4	522	0.294	67.4	49.6
TC-V-110	9090871-35	Black Twinberry	Leaves/Stems	2019-08-09		1200	12.5	0.001	0.448	0.638	1240	5450	0.028	0.005	1	32.7	0.0005	0.01	0.275	0.0005	0.01	8.8
TC-V-111	9090871-36	Fireweed	Leaves/Stems	2019-08-09		926	13.2	0.0026	0.141	0.165	947	2780	0.088	0.005	5.2	16.7	0.0005	0.01	0.233	0.0005	0.01	3.88
TC-V-112	9090871-37	Prickly Rose	Leaves/Stems	2019-08-09		1170	57.5	0.001	0.332	0.343	2000	3630	0.063	0.005	1	33.5	0.0005	0.01	0.227	0.0005	0.01	2.76
TC-V-153	9100459-25	Western-mountain Ash	Leaves/Stems	2019-08-09		1480	234	0.0028	0.263	0.898	2200	4070	0.03	0.005	1	30.2	0.0005	0.01	0.618	0.0005	0.01	3.42
TC-029	7082434-29		SOIL	2017-07-27	14.50	5200.00	422.00	0.02	0.50	17.40	349.00	431.00	0.10	0.05	136.00	15.00	0.05	0.52	350.00	0.29	68.00	72.20
TC-V-040	8121526-39	Fireweed	Leaves/Stems	2017-07-27		52.1	1.26	0.001	0.005	0.021	59	196	0.01	0.005	1	0.693	0.0005	0.01	0.025	0.0005	0.01	0.26
TC-031	7082434-31		SOIL	2017-07-28	14.70	4330.00	440.00	0.02	0.97	15.70	309.00	469.00	0.10	0.05	103.00	20.10	0.05	0.50	259.00	0.26	61.30	73.50
TC-V-043	8121526-42	Subalpine Fir	Leaves/Stems	2017-07-28		17.4	19.9	0.001	0.005	0.026	70.2	214	0.01	0.005	1	0.144	0.0005	0.01	0.025	0.0005	0.01	0.64
TC-057	9090720-09		SOIL	2019-07-15		4120	1060	0.02	0.48	9.96	432	791	0.1	0.12	52	20.4	0.05	0.51	462	0.203	75.1	63.5
TC-V-051	9090871-01	Alder	Leaves/Stems	2019-07-15		835	90.6	0.001	0.217	0.535	1140	3960	0.01	0.005	1	7.26	0.0005	0.01	0.141	0.0005	0.01	28.8
TC-V-052	9090871-02	Scouler's Willow	Leaves/Stems	2019-07-15		589	15.4	0.001	0.094	0.584	1080	4970	0.036	0.005	1	11.3	0.0005	0.01	0.122	0.0005	0.01	18.7
TC-058	9090720-10		SOIL	2019-07-15		6700	567	0.02	0.78	20.5	745	1060	0.1	0.14	145	48.6	0.05	0.45	353	1.02	64.3	69.6
TC-V-053	9090871-03	Common Horsetail	Leaves/Stems	2019-07-15		2610	10.3	0.001	0.094	0.076	462	6550	0.125	0.005	10	30.1	0.0005	0.082	0.067	0.0005	0.01	4.96
TC-059	9090720-11		SOIL	2019-07-16		6240	1950	0.04	0.62	31	1970	1860	0.1	0.28	113	43.4	0.16	0.61	196	0.654	71.7	136
TC-V-054	9090871-04	Black Cottonwood	Leaves/Stems	2019-07-16		1310	23.3	0.001	0.02	0.505	931	5210	0.01	0.005	1	17.9	0.0005	0.01	0.069	0.0005	0.01	37.1
TC-V-055	9090871-05	Common Horsetail	Leaves/Stems	2019-07-16		1700	33.8	0.0021	0.075	0.172	430	7050	0.01	0.005	9.4	30.3	0.0013	0.022	0.129	0.0005	0.022	4.47
TC-060	9100455-01		SOIL	2019-07-24		2270	105	0.045	0.38	10	486	455	0.1	0.05	113	48.5	0.05	0.21	60.5	0.157	17.3	28.1
TC-V-056	9100459-01	Black Twinberry	Leaves/Stems	2019-07-24		1170	9.83	0.001	0.185	0.832	917	6290	0.01	0.005	1	12.5	0.0005	0.01	0.193	0.0005	0.01	4.5
TC-V-057	9100459-02	Common Horsetail	Leaves/Stems	2019-07-24		1130	22.4	0.001	0.035	0.109	551	5330	0.01	0.005	3.3	13.8	0.0013	0.01	0.18	0.0005	0.01	4.05
TC-061	9090720-12		SOIL	2019-08-01		5310	1610	0.02	0.75	22.3	947	1170	0.1	0.24	55	44.2	0.05	0.43	394	0.306	56.3	229
TC-V-058	9090871-06	Black Twinberry	Leaves/Stems	2019-08-01		792	5.45	0.001	0.706	0.605	1710	8900	0.01	0.005	1	15.2	0.0005	0.01	0.143	0.0005	0.01	8.73
TC-062	9090720-13		SOIL	2019-08-01		5640	1140	0.02	0.68	22.3	733	919	0.1	0.14	97	36.6	0.05	0.39	228	0.407	56.9	121
TC-V-059	9090871-07	Alder	Leaves/Stems	2019-08-01		956	79.1	0.001	0.117	0.81	1050	3080	0.01	0.005	1	31.4	0.0005	0.01	0.144	0.0005	0.01	17.2
TC-V-060	9090871-08	Black Twinberry	Leaves/Stems	2019-08-01		807	6.66	0.001	0.388	0.828	1320	8080	0.01	0.005	1	19.2	0.0005	0.01	0.115	0.0005	0.01	7.64
TC-V-061	9090871-09	Fireweed	Leaves/Stems	2019-08-01		1070	25.2	0.001	0.283	0.125	1370	5510	0.01	0.005	2.2	21.2	0.0005	0.01	0.106	0.0005	0.01	10.7
TC-063	9090720-14		SOIL	2019-08-01		2330	270	0.089	0.49	13.3	896	702	0.1	0.05	75	66.1	0.05	0.1	54.7	0.294	20.6	88.2
TC-V-062	9090871-10	Alder	Leaves/Stems	2019-08-01		1140	80.2	0.001	0.005	0.536	727	1800	0.01	0.005	1	28.6	0.0026	0.01	0.155	0.0005	0.01	19.4
TC-V-063	9090871-11	Black Twinberry	Leaves/Stems	2019-08-01		1270	11.8	0.001	0.176	0.553	933	4020	0.01	0.005	1	28	0.0005	0.01	0.096	0.0005	0.01	13.8
TC-064	9090720-15		SOIL	2019-08-08		8460	678	0.02	0.72	17.7	565	682	0.1	0.05	161	17.3	0.05	0.34	677	0.318	84.4	82
TC-V-064	9090871-12	Highbush Cranberry	Berries	2019-08-08		158	0.648	0.001	0.034	0.075	286	1760	0.01	0.005	1	0.91	0.0005	0.01	0.025	0.0005	0.01	1.25
TC-V-065	9090871-13	Western-mountain Ash	Leaves/Stems	2019-08-08		925	5.53	0.001	0.288	0.181	1520	4210	0.01	0.005	1	19.6	0.0005	0.01	0.171	0.0005	0.01	4.82

Notes:
Bold numbers represent 1/2 the method detection limit (MDL).

Appendix A-5: Baseline Soil and Vegetation Tissue Samples for the Calculation of Soil-to-Plant Bioconcentration Factors

	LAB ID	Common Name	Sample Type	Sample Date	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc
					mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet	mg/kg wet
						2	0.02	0.002	0.01	0.01	5	10	0.02	0.01	2	0.01	0.001	0.02	0.05	0.001	0.02	0.1
Sample ID																						
TC-065	9100455-02		SOIL	2019-08-08		7760	868	0.02	1.03	21.3	549	782	0.1	0.05	109	40	0.05	0.32	541	0.737	77.6	90.7
TC-V-067	9100459-04	Common Horsetail	Leaves/Stems	2019-08-08		1110	25.1	0.001	0.109	0.122	266	6120	0.01	0.005	10.4	21.6	0.0014	0.01	0.933	0.0005	0.079	5.12
TC-V-068	9100459-05	Cow Parsnip	Leaves/Stems	2019-08-08		1730	20.6	0.001	0.134	1.18	2170	16300	0.01	0.005	4.6	8.88	0.0005	0.01	0.541	0.0005	0.01	12.5
TC-V-069	9100459-06	Red Osier Dogwood	Leaves/Stems	2019-08-08		964	9.04	0.001	0.037	0.23	528	4530	0.01	0.005	1	18.2	0.0005	0.01	0.26	0.0005	0.01	4.19
TC-066	9100455-03		SOIL	2019-08-08		5080	1170	0.02	1.29	15.2	1040	1230	0.1	0.24	98	34	0.05	0.38	239	0.25	67.1	139
TC-V-075	9100459-12	Black Twinberry	Leaves/Stems	2019-08-08		936	26.9	0.0027	2.18	0.795	1830	7540	0.01	0.005	2.6	23.7	0.0005	0.01	2.51	0.0005	0.138	11.9
TC-V-076	9100459-13	Common Horsetail	Leaves/Stems	2019-08-08		910	12.8	0.001	0.122	0.091	252	6640	0.01	0.005	12.4	26	0.0005	0.01	0.175	0.0005	0.01	6.93
TC-V-077	9100459-14	Cow Parsnip	Leaves/Stems	2019-08-08		1860	33.9	0.0021	0.42	0.862	3050	19000	0.01	0.005	2.7	15.7	0.0005	0.01	0.634	0.0005	0.01	16.2
TC-V-078	9100459-15	Fireweed	Leaves/Stems	2019-08-08		677	14.8	0.0032	0.107	0.112	559	4920	0.01	0.005	2.8	8.88	0.0005	0.01	0.186	0.0005	0.01	3.29
TC-V-079	9100459-16	Tea-leafed Willow	Leaves/Stems	2019-08-08		710	28.6	0.001	0.09	0.831	651	6280	0.01	0.005	1	13.8	0.0005	0.01	0.219	0.0005	0.01	23.8
TC-072	9100455-06		SOIL	2019-08-09		8180	1020	0.02	1.21	19.4	1070	1310	0.1	0.05	25	44.2	0.05	0.34	329	0.376	76.3	102
TC-V-094	9100459-19	Black Twinberry	Leaves/Stems	2019-08-09		797	11	0.0031	1.62	0.159	864	7080	0.01	0.005	1	21.7	0.0005	0.01	1.45	0.0005	0.096	10.7
TC-V-095	9100459-20	Cow Parsnip	Leaves/Stems	2019-08-09		1770	37.2	0.0023	1.04	0.54	2590	17300	0.01	0.005	3.4	24	0.0005	0.023	3.27	0.0019	0.371	13.6
TC-V-096	9100459-21	Fireweed	Leaves/Stems	2019-08-09		655	17.8	0.0036	0.404	0.068	811	4410	0.01	0.005	3.7	12.7	0.0005	0.01	1.24	0.0005	0.081	4.93
TC-V-097	9100459-22	Western-mountain Ash	Leaves/Stems	2019-08-09		1320	39.3	0.0045	0.26	0.239	1920	5650	0.01	0.005	1	30.8	0.0005	0.01	1.74	0.0005	0.087	6
TC-073	9090720-19		SOIL	2019-08-09		7600	1130	0.02	1	28.7	688	1140	0.1	0.13	163	49.2	0.05	0.36	296	0.456	63.7	85.4
TC-V-098	9090871-23	Common Horsetail	Leaves/Stems	2019-08-09		1390	11.3	0.001	0.236	0.061	389	7200	0.01	0.005	11.1	20.1	0.0053	0.01	0.415	0.0005	0.074	4.92
TC-V-099	9090871-24	Cow Parsnip	Leaves/Stems	2019-08-09		1500	12.7	0.001	0.423	0.309	2840	14600	0.01	0.005	3.5	12	0.0005	0.01	0.326	0.0005	0.073	14.6
TC-V-100	9090871-25	Fireweed	Leaves/Stems	2019-08-09		722	11.9	0.0039	0.262	0.039	983	4910	0.01	0.005	3.4	10.1	0.0005	0.01	0.216	0.0005	0.01	7.73
TC-V-101	9090871-26	Tea-leafed Willow	Leaves/Stems	2019-08-09		719	10.3	0.001	0.06	0.597	891	4230	0.01	0.005	1	19.4	0.0005	0.01	0.149	0.0005	0.01	26
IR214	9061368-02		SOIL	2019-06-13	13.50	5760.00	878.00	0.02	0.84	21.90	434.00	1050.00	0.10	0.05	131.00	28.80	0.05	0.38	402.00	0.35	60.50	75.50
TC-V-134	9090871-59	Highbush Cranberry	Berries	2019-08-30		226	0.766	0.001	0.043	0.179	462	1810	0.01	0.005	1	2.25	0.0005	0.01	0.025	0.0005	0.01	1.94
TC-076	9090720-22		SOIL	2019-08-09		4750	423	0.02	0.59	16.3	387	527	0.1	0.05	76	17	0.05	0.42	303	0.274	74.7	95.5
TC-V-116	9090871-41	Red Raspberry	Berries	2019-08-09		272	51.1	0.001	0.037	0.209	627	2100	0.01	0.005	1	1.14	0.0005	0.01	0.025	0.0005	0.01	4.88
TC-069	9090720-17		SOIL	2019-08-08		5400	1150	0.02	0.75	16.1	397	947	0.1	0.15	94	24.2	0.05	0.58	241	0.331	84.9	96.5
TC-V-086	9090871-18	Highbush Cranberry	Berries	2019-08-08		188	0.959	0.001	0.028	0.102	333	1970	0.01	0.005	1	1.91	0.0005	0.01	0.025	0.0005	0.01	1.66
TC-V-088	9090871-20	Red Raspberry	Berries	2019-08-08		304	32.8	0.001	0.069	0.22	712	1940	0.01	0.005	1	1.72	0.0005	0.01	0.025	0.0005	0.01	5.39
TC-011	7082434-11		SOIL	2017-07-27	14.20	5950.00	436.00	0.02	0.73	18.60	412.00	400.00	0.10	0.13	105.00	20.40	0.05	0.45	355.00	0.28	64.80	72.30
TC-V-138	9090871-63	Highbush Cranberry	Berries	2019-09-07		132	0.648	0.001	0.005	0.052	172	1530	0.01	0.005	1	1.4	0.0005	0.01	0.025	0.0005	0.01	1.17
TC-V-049	8121526-48	Black Huckleberry	Berries	2018-08-07		3.2	0.19	0.001	0.005	0.005	2.5	51	0.01	0.005	1	0.005	0.0005	0.01	0.025	0.0005	0.01	0.05
TC-010	7082434-10		SOIL	2017-07-26	19.70	5780.00	925.00	0.02	0.43	15.40	278.00	566.00	0.10	0.05	262.00	50.90	0.05	0.51	352.00	0.32	73.40	62.80
TC-V-008	8121526-07	Black Twinberry	Berries	2017-07-26		262	2.39	0.001	0.047	0.301	595	2420	0.01	0.005	1	4.26	0.0005	0.01	0.025	0.0005	0.01	3.11
TC-068	9090720-16		SOIL	2019-08-08		3580	765	0.02	0.51	10.3	560	668	0.1	0.17	84	22.5	0.05	0.47	518	0.228	73.1	95
TC-V-030	8121526-29	Devils Club	Berries	2018-08-17		23.7	0.504	0.001	0.005	0.014	67.2	405	0.01	0.005	1	0.128	0.0005	0.01	0.025	0.0005	0.01	0.18

Notes:
Bold numbers represent 1/2 the method detection limit (MDL).

Appendix A-6: Calculated Soil-to-Plant Bioconcentration Factors

Sample ID	Common Name	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury
TC-V-004	Scouler's Willow	Leaves/Stems	0.0000143	0.00185	0.000366	0.0155	0.00294	0.100	1.28	0.573	0.230	0.000219	0.0128	0.0678	0.000219	0.000259	0.0461	0.00998	0.0500
TC-V-007	Subalpine Fir	Leaves/Stems	0.0000920	0.00200	0.000292	0.0419	0.00175	0.0909	1.38	0.0111	0.115	0.000195	0.000146	0.0586	0.000204	0.000261	0.0712	0.0279	0.0426
TC-V-102	Black Cottonwood	Leaves/Stems	0.000214	0.00256	0.00198	0.0881	0.00217	0.0667	10.5	1.51	2.59	0.00564	0.0123	0.0909	0.000400	0.000570	0.321	0.0356	0.0227
TC-V-103	Black Twinberry	Leaves/Stems	0.000264	0.00256	0.000283	0.0597	0.00217	0.0667	3.97	0.0408	1.11	0.00168	0.000585	0.0569	0.000301	0.000248	0.178	0.00726	0.0227
TC-V-104	Common Horsetail	Leaves/Stems	0.000388	0.00256	0.00300	0.0926	0.00217	0.0667	6.55	0.114	2.85	0.0140	0.00214	0.0547	0.000716	0.000582	0.374	0.0162	0.0636
TC-V-105	Prickly Rose	Leaves/Stems	0.000222	0.00256	0.000793	0.132	0.00217	0.0667	7.99	0.0244	2.46	0.00212	0.000364	0.0625	0.000478	0.000520	0.338	0.0468	0.0523
TC-V-110	Black Twinberry	Leaves/Stems	0.000273	0.00217	0.000317	0.183	0.00303	0.0909	1.87	0.0667	2.12	0.00559	0.00105	0.0634	0.000417	0.000297	0.212	0.0264	0.0500
TC-V-111	Fireweed	Leaves/Stems	0.000315	0.00217	0.00105	0.0365	0.00303	0.0909	1.67	0.0167	1.58	0.00514	0.000223	0.0652	0.000417	0.000297	0.164	0.0279	0.130
TC-V-112	Prickly Rose	Leaves/Stems	0.000146	0.00217	0.000787	0.0908	0.00303	0.0909	4.67	0.0517	2.57	0.00227	0.000223	0.0582	0.000382	0.000297	0.207	0.122	0.0500
TC-V-153	Western-mountain Ash	Leaves/Stems	0.000178	0.00217	0.000749	0.262	0.00303	0.0909	2.59	0.302	1.87	0.000682	0.00124	0.0609	0.000373	0.000801	0.261	0.495	0.140
TC-V-040	Fireweed	Leaves/Stems	0.0000355	0.00152	0.000302	0.0120	0.00250	0.0833	0.0962	0.00826	0.113	0.000214	0.000237	0.00369	0.0000137	0.000249	0.0100	0.00299	0.0500
TC-V-043	Subalpine Fir	Leaves/Stems	0.0000789	0.00156	0.000326	0.00694	0.00303	0.0714	0.104	0.0110	0.0367	0.000240	0.000268	0.00251	0.0000146	0.000305	0.00402	0.0452	0.0500
TC-V-051	Alder	Leaves/Stems	0.000122	0.00313	0.000608	0.163	0.00455	0.0769	2.89	0.507	0.758	0.00113	0.00550	0.135	0.000360	0.000577	0.203	0.0855	0.0500
TC-V-052	Scouler's Willow	Leaves/Stems	0.000106	0.00313	0.000608	0.0401	0.00455	0.0769	2.41	1.39	1.19	0.00192	0.00353	0.101	0.000289	0.000281	0.143	0.0145	0.0500
TC-V-053	Common Horsetail	Leaves/Stems	0.0000647	0.00345	0.000269	0.0903	0.00217	0.0588	1.99	0.151	0.722	0.0118	0.00347	0.0445	0.000318	0.000205	0.390	0.0182	0.0500
TC-V-054	Black Cottonwood	Leaves/Stems	0.0000614	0.00313	0.00109	0.0213	0.00133	0.0370	2.68	0.300	0.699	0.00152	0.0136	0.0543	0.000472	0.000169	0.210	0.0119	0.0250
TC-V-055	Common Horsetail	Leaves/Stems	0.000377	0.00313	0.000712	0.0500	0.00133	0.0370	1.54	0.0460	1.04	0.00905	0.00661	0.0410	0.000661	0.000169	0.272	0.0173	0.0525
TC-V-056	Black Twinberry	Leaves/Stems	0.000194	0.0200	0.000825	0.0915	0.00714	0.200	4.08	0.0192	0.472	0.00182	0.0104	0.196	0.00109	0.00111	0.515	0.0936	0.0222
TC-V-057	Common Horsetail	Leaves/Stems	0.000588	0.0200	0.00805	0.155	0.00714	0.200	1.66	0.0603	0.361	0.00852	0.0367	0.160	0.00556	0.000556	0.498	0.213	0.0222
TC-V-058	Black Twinberry	Leaves/Stems	0.0000771	0.00185	0.000248	0.0411	0.00250	0.0526	1.60	0.0204	0.537	0.00163	0.000480	0.0584	0.000320	0.000174	0.149	0.00339	0.0500
TC-V-059	Alder	Leaves/Stems	0.000171	0.00208	0.000234	0.121	0.00250	0.0714	8.36	0.00849	1.30	0.00150	0.00436	0.146	0.000707	0.000613	0.170	0.0694	0.0500
TC-V-060	Black Twinberry	Leaves/Stems	0.0000605	0.00208	0.000234	0.0700	0.00250	0.0714	3.55	0.0398	0.819	0.00187	0.000609	0.0723	0.000312	0.000180	0.143	0.00584	0.0500
TC-V-061	Fireweed	Leaves/Stems	0.000109	0.00208	0.000234	0.0435	0.00250	0.0714	10.5	0.00333	0.828	0.00114	0.000316	0.118	0.000726	0.000180	0.190	0.0221	0.0500
TC-V-062	Alder	Leaves/Stems	0.000272	0.00385	0.00494	0.0993	0.00385	0.200	3.85	0.00519	0.587	0.00415	0.0128	0.154	0.00277	0.00201	0.489	0.297	0.0112
TC-V-063	Black Twinberry	Leaves/Stems	0.000120	0.00385	0.00339	0.131	0.00385	0.200	3.35	0.158	0.608	0.00255	0.00395	0.0970	0.00197	0.000637	0.545	0.0437	0.0112
TC-V-065	Western-mountain Ash	Leaves/Stems	0.000125	0.00135	0.000271	0.239	0.00303	0.0769	7.69	0.00847	1.92	0.00134	0.000180	0.0256	0.000282	0.000324	0.109	0.00816	0.0500
TC-V-067	Common Horsetail	Leaves/Stems	0.00134	0.00145	0.00466	0.0600	0.00303	0.0476	1.39	0.0535	0.956	0.00500	0.00945	0.0434	0.00127	0.00160	0.143	0.0289	0.0500
TC-V-068	Cow Parsnip	Leaves/Stems	0.000250	0.00145	0.000639	0.0278	0.00303	0.0476	4.48	0.0476	0.756	0.00119	0.00198	0.0787	0.000666	0.000770	0.223	0.0237	0.0500
TC-V-069	Red Osier Dogwood	Leaves/Stems	0.000164	0.00145	0.000258	0.0959	0.00303	0.0476	1.87	0.00350	0.929	0.00107	0.000559	0.0238	0.000341	0.000636	0.124	0.0104	0.0500
TC-V-075	Black Twinberry	Leaves/Stems	0.00264	0.00455	0.00467	0.172	0.00385	0.0286	3.16	0.0513	1.04	0.0149	0.00316	0.0823	0.00212	0.00266	0.184	0.0230	0.135
TC-V-076	Common Horsetail	Leaves/Stems	0.000170	0.00182	0.000758	0.0300	0.00385	0.0286	5.71	0.124	1.36	0.00427	0.00230	0.0551	0.000383	0.000630	0.179	0.0109	0.0500
TC-V-077	Cow Parsnip	Leaves/Stems	0.000174	0.00182	0.000732	0.0405	0.00385	0.0286	12.1	0.0136	1.28	0.000664	0.00377	0.248	0.00105	0.000630	0.366	0.0290	0.105
TC-V-078	Fireweed	Leaves/Stems	0.000113	0.00182	0.000327	0.0432	0.00385	0.0286	3.81	0.00170	0.595	0.000622	0.000174	0.0657	0.000488	0.000221	0.133	0.0126	0.160
TC-V-079	Tea-leafed Willow	Leaves/Stems	0.0000953	0.00182	0.000719	0.0397	0.00385	0.0286	6.48	0.538	0.706	0.000664	0.00745	0.0845	0.000433	0.000475	0.140	0.0244	0.0500
TC-V-094	Black Twinberry	Leaves/Stems	0.00148	0.00130	0.00251	0.128	0.00278	0.0303	2.10	0.0290	0.645	0.0103	0.00173	0.0514	0.00120	0.00480	0.0974	0.0108	0.155
TC-V-095	Cow Parsnip	Leaves/Stems	0.00667	0.00662	0.0118	0.136	0.00778	0.0303	4.31	0.0452	0.903	0.0115	0.00789	0.0966	0.00460	0.00734	0.216	0.0365	0.115
TC-V-096	Fireweed	Leaves/Stems	0.00140	0.00130	0.00179	0.0589	0.00278	0.0303	0.883	0.00246	0.438	0.00364	0.00123	0.0480	0.00107	0.00176	0.0801	0.0175	0.180
TC-V-097	Western-mountain Ash	Leaves/Stems	0.00148	0.00273	0.00228	0.233	0.00278	0.0303	1.21	0.0391	0.839	0.00924	0.00165	0.0573	0.00128	0.00253	0.161	0.0385	0.225
TC-V-098	Common Horsetail	Leaves/Stems	0.000935	0.00143	0.00780	0.0687	0.00222	0.0455	1.43	0.0212	0.773	0.00673	0.00276	0.0335	0.00138	0.00132	0.183	0.0100	0.0500
TC-V-099	Cow Parsnip	Leaves/Stems	0.00121	0.00143	0.00303	0.0501	0.00222	0.0455	4.36	0.0267	0.689	0.00239	0.00310	0.105	0.00157	0.00141	0.197	0.0112	0.0500
TC-V-100	Fireweed	Leaves/Stems	0.000237	0.00143	0.000796	0.0364	0.00222	0.0455	2.65	0.00262	0.432	0.00109	0.000404	0.0447	0.000619	0.000501	0.0950	0.0105	0.195
TC-V-101	Tea-leafed Willow	Leaves/Stems	0.0000925	0.00143	0.000221	0.0476	0.00222	0.0455	2.95	1.36	0.731	0.000810	0.00477	0.0332	0.000415	0.000233	0.0946	0.00912	0.0500
TC-V-001	Soopolallie	Berries	0.000201	0.00615	0.000590	0.00580	0.00328	0.133	0.928	0.0114	0.0519	0.00106	0.000225	0.0632	0.000456	0.000266	0.0314	0.00629	0.0500
TC-V-032	Black Gooseberry	Berries	0.0000148	0.00308	0.000590	0.000422	0.00328	0.133	0.0217	0.00178	0.00446	0.000240	0.000225	0.00188	0.0000190	0.000266	0.00188	0.000134	0.0500
TC-V-145	Highbush Cranberry	Berries	0.0000959	0.00308	0.000590	0.0101	0.00328	0.133	0.372	0.0134	0.0352	0.000240	0.000225	0.0196	0.000114	0.000266	0.0263	0.000419	0.0500
TC-V-033	Soopolallie	Berries	0.0000132	0.00161	0.000260	0.000545	0.00244	0.200	0.0929	0.00435	0.00433	0.000200	0.000163	0.00255	0.0000146	0.000243	0.00140	0.000276	0.0500
TC-V-064	Highbush Cranberry	Berries	0.0000286	0.00135	0.000271	0.0166	0.00303	0.0769	2.22	0.00847	0.0834	0.000216	0.000180	0.0157	0.0000421	0.000324	0.0187	0.000956	0.0500
TC-V-134	Highbush Cranberry	Berries	0.0000456	0.00196	0.000238	0.0183	0.00244	0.0833	0.865	0.0194	0.0982	0.000213	0.000169	0.0401	0.000111	0.000220	0.0392	0.000872	0.0500
TC-V-116	Red Raspberry	Berries	0.0000116	0.00167	0.000238	0.0180	0.00303	0.0833	2.85	0.138	0.177	0.000221	0.00119	0.0407	0.000149	0.000274	0.0573	0.121	0.0500
TC-V-086	Highbush Cranberry	Berries	0.0000521	0.00222	0.000238	0.0184	0.00238	0.0556	2.50	0.0143	0.184	0.000199	0.000146	0.0301	0.0000533	0.000213	0.0348	0.000834	0.0500
TC-V-088	Red Raspberry	Berries	0.0000105	0.00222	0.000238	0.0119	0.00238	0.0556	3.37	0.153	0.222	0.000199	0.000504	0.0485	0.000221	0.000213	0.0563	0.0285	0.0500
TC-V-138	Highbush Cranberry	Berries	0.0000111	0.00196	0.000277	0.0171	0.00263	0.100	0.778	0.0212	0.144	0.000228	0.000248	0.0210	0.0000732	0.000253	0.0222	0.00149	0.0500
TC-V-049	Black Huckleberry	Berries	0.0000111	0.00196	0.000277	0.000259	0.00263	0.100	0.0435	0.00885	0.00306	0.000228	0.000248	0.00134	0.0000152	0.000253	0.000538	0.000436	0.0500
TC-V-008	Black Twinberry	Berries	0.0000141	0.00133	0.000314	0.0157	0.00238	0.0909	0.615										

Appendix A-6: Calculated Soil-to-Plant Bioconcentration Factors

Sample ID	Common Name	Sample Type	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc
TC-V-004	Scouler's Willow	Leaves/Stems	0.0878	0.0504	4.86	11.0	0.100	0.0313	0.0156	0.116	0.0100	0.0227	0.000120	0.00179	0.000157	0.244
TC-V-007	Subalpine Fir	Leaves/Stems	0.0308	0.0108	1.20	6.35	0.100	0.0156	0.00617	0.0553	0.0260	0.0238	0.000537	0.00129	0.000166	0.238
TC-V-102	Black Cottonwood	Leaves/Stems	0.178	0.0578	3.71	9.69	0.330	0.100	0.0103	1.86	0.0100	0.0222	0.00226	0.00183	0.000170	0.751
TC-V-103	Black Twinberry	Leaves/Stems	0.460	0.0631	3.39	13.2	0.100	0.100	0.0103	0.741	0.0100	0.0222	0.00181	0.00183	0.000170	0.0841
TC-V-104	Common Horsetail	Leaves/Stems	0.458	0.00601	0.944	12.6	2.66	0.100	0.107	1.83	0.0100	0.0222	0.00272	0.00183	0.000170	0.0512
TC-V-105	Prickly Rose	Leaves/Stems	0.660	0.0118	5.99	9.66	0.540	0.100	0.0103	1.92	0.0100	0.0222	0.00318	0.00183	0.000170	0.0455
TC-V-110	Black Twinberry	Leaves/Stems	0.659	0.0354	4.77	7.85	0.280	0.100	0.00769	1.20	0.0100	0.0250	0.000527	0.00170	0.000148	0.177
TC-V-111	Fireweed	Leaves/Stems	0.207	0.00917	3.64	4.01	0.880	0.100	0.0400	0.614	0.0100	0.0250	0.000446	0.00170	0.000148	0.0782
TC-V-112	Prickly Rose	Leaves/Stems	0.488	0.0191	7.69	5.23	0.630	0.100	0.00769	1.23	0.0100	0.0250	0.000435	0.00170	0.000148	0.0556
TC-V-153	Western-mountain Ash	Leaves/Stems	0.387	0.0499	8.46	5.86	0.300	0.100	0.00769	1.11	0.0100	0.0250	0.00118	0.00170	0.000148	0.0690
TC-V-040	Fireweed	Leaves/Stems	0.0100	0.00121	0.169	0.455	0.100	0.100	0.00735	0.0462	0.0100	0.0192	0.0000714	0.00171	0.000147	0.00360
TC-V-043	Subalpine Fir	Leaves/Stems	0.00515	0.00166	0.227	0.456	0.100	0.100	0.00971	0.00716	0.0100	0.0200	0.0000965	0.00195	0.000163	0.00871
TC-V-051	Alder	Leaves/Stems	0.452	0.0537	2.64	5.01	0.100	0.0417	0.0192	0.356	0.0100	0.0196	0.000305	0.00246	0.000133	0.454
TC-V-052	Scouler's Willow	Leaves/Stems	0.196	0.0586	2.50	6.28	0.360	0.0417	0.0192	0.554	0.0100	0.0196	0.000264	0.00246	0.000133	0.294
TC-V-053	Common Horsetail	Leaves/Stems	0.121	0.00371	0.620	6.18	1.25	0.0357	0.0690	0.619	0.0100	0.182	0.000190	0.000490	0.000156	0.0713
TC-V-054	Black Cottonwood	Leaves/Stems	0.0323	0.0163	0.473	2.80	0.100	0.0179	0.00885	0.412	0.00313	0.0164	0.000352	0.000765	0.000139	0.273
TC-V-055	Common Horsetail	Leaves/Stems	0.121	0.00555	0.218	3.79	0.100	0.0179	0.0832	0.698	0.00813	0.0361	0.000658	0.000765	0.000307	0.0329
TC-V-056	Black Twinberry	Leaves/Stems	0.487	0.0832	1.89	13.8	0.100	0.100	0.00885	0.258	0.0100	0.0476	0.00319	0.00318	0.000578	0.160
TC-V-057	Common Horsetail	Leaves/Stems	0.0921	0.0109	1.13	11.7	0.100	0.100	0.0292	0.285	0.0260	0.0476	0.00298	0.00318	0.000578	0.144
TC-V-058	Black Twinberry	Leaves/Stems	0.941	0.0271	1.81	7.61	0.100	0.0208	0.0182	0.344	0.0100	0.0233	0.000363	0.00163	0.000178	0.0381
TC-V-059	Alder	Leaves/Stems	0.172	0.0363	1.43	3.35	0.100	0.0357	0.0103	0.858	0.0100	0.0256	0.000632	0.00123	0.000176	0.142
TC-V-060	Black Twinberry	Leaves/Stems	0.571	0.0371	1.80	8.79	0.100	0.0357	0.0103	0.525	0.0100	0.0256	0.000504	0.00123	0.000176	0.0631
TC-V-061	Fireweed	Leaves/Stems	0.416	0.00561	1.87	6.00	0.100	0.0357	0.0227	0.579	0.0100	0.0256	0.000465	0.00123	0.000176	0.0884
TC-V-062	Alder	Leaves/Stems	0.0102	0.0403	0.811	2.56	0.100	0.100	0.0133	0.433	0.0520	0.100	0.00283	0.00170	0.000485	0.220
TC-V-063	Black Twinberry	Leaves/Stems	0.359	0.0416	1.04	5.73	0.100	0.100	0.0133	0.424	0.0100	0.100	0.00176	0.00170	0.000485	0.156
TC-V-065	Western-mountain Ash	Leaves/Stems	0.400	0.0102	2.69	6.17	0.100	0.100	0.00621	1.13	0.0100	0.0294	0.000253	0.00157	0.000118	0.0588
TC-V-067	Common Horsetail	Leaves/Stems	0.106	0.00573	0.485	7.83	0.100	0.100	0.0954	0.540	0.0280	0.0313	0.00172	0.000678	0.00102	0.0564
TC-V-068	Cow Parsnip	Leaves/Stems	0.130	0.0554	3.95	20.8	0.100	0.100	0.0422	0.222	0.0100	0.0313	0.00100	0.000678	0.000129	0.138
TC-V-069	Red Osier Dogwood	Leaves/Stems	0.0359	0.0108	0.962	5.79	0.100	0.100	0.00917	0.455	0.0100	0.0313	0.000481	0.000678	0.000129	0.0462
TC-V-075	Black Twinberry	Leaves/Stems	1.69	0.0523	1.76	6.13	0.100	0.0208	0.0265	0.697	0.0100	0.0263	0.0105	0.00200	0.00206	0.0856
TC-V-076	Common Horsetail	Leaves/Stems	0.0946	0.00599	0.242	5.40	0.100	0.0208	0.127	0.765	0.0100	0.0263	0.000732	0.00200	0.000149	0.0499
TC-V-077	Cow Parsnip	Leaves/Stems	0.326	0.0567	2.93	15.4	0.100	0.0208	0.0276	0.462	0.0100	0.0263	0.00265	0.00200	0.000149	0.117
TC-V-078	Fireweed	Leaves/Stems	0.0829	0.00737	0.538	4.00	0.100	0.0208	0.0286	0.261	0.0100	0.0263	0.000778	0.00200	0.000149	0.0237
TC-V-079	Tea-leafed Willow	Leaves/Stems	0.0698	0.0547	0.626	5.11	0.100	0.0208	0.0102	0.406	0.0100	0.0263	0.000916	0.00200	0.000149	0.171
TC-V-094	Black Twinberry	Leaves/Stems	1.34	0.00820	0.807	5.40	0.100	0.100	0.0400	0.491	0.0100	0.0294	0.00441	0.00133	0.00126	0.105
TC-V-095	Cow Parsnip	Leaves/Stems	0.860	0.0278	2.42	13.2	0.100	0.100	0.136	0.543	0.0100	0.0676	0.00994	0.00505	0.00486	0.133
TC-V-096	Fireweed	Leaves/Stems	0.334	0.00351	0.758	3.37	0.100	0.100	0.148	0.287	0.0100	0.0294	0.00377	0.00133	0.00106	0.0483
TC-V-097	Western-mountain Ash	Leaves/Stems	0.215	0.0123	1.79	4.31	0.100	0.100	0.0400	0.697	0.0100	0.0294	0.00529	0.00133	0.00114	0.0588
TC-V-098	Common Horsetail	Leaves/Stems	0.236	0.00213	0.565	6.32	0.100	0.0385	0.0681	0.409	0.106	0.0278	0.00140	0.00110	0.00116	0.0576
TC-V-099	Cow Parsnip	Leaves/Stems	0.423	0.0108	4.13	12.8	0.100	0.0385	0.0215	0.244	0.0100	0.0278	0.00110	0.00110	0.00115	0.171
TC-V-100	Fireweed	Leaves/Stems	0.262	0.00136	1.43	4.31	0.100	0.0385	0.0209	0.205	0.0100	0.0278	0.000730	0.00110	0.000157	0.0905
TC-V-101	Tea-leafed Willow	Leaves/Stems	0.0600	0.0208	1.30	3.71	0.100	0.0385	0.00613	0.394	0.0100	0.0278	0.000503	0.00110	0.000157	0.304
TC-V-001	Soopolallie	Berries	1.90	0.0428	0.593	2.23	0.358	0.0435	0.00722	0.0397	0.0100	0.0274	0.000319	0.00171	0.000197	0.0268
TC-V-032	Black Gooseberry	Berries	0.00952	0.000360	0.0276	0.118	0.0606	0.0435	0.00722	0.00282	0.0100	0.0274	0.0000419	0.00171	0.000197	0.00103
TC-V-145	Highbush Cranberry	Berries	0.0286	0.00115	0.179	0.918	0.0606	0.0435	0.0245	0.0313	0.0100	0.0274	0.000106	0.00171	0.000197	0.00985
TC-V-033	Soopolallie	Berries	0.0537	0.00304	0.0480	0.165	0.100	0.100	0.00513	0.00257	0.0100	0.0256	0.0000385	0.00144	0.000139	0.00230
TC-V-064	Highbush Cranberry	Berries	0.0472	0.00424	0.506	2.58	0.100	0.100	0.00621	0.0526	0.0100	0.0294	0.0000369	0.00157	0.000118	0.0152
TC-V-134	Highbush Cranberry	Berries	0.0512	0.00817	1.06	1.72	0.100	0.100	0.00763	0.0781	0.0100	0.0263	0.0000622	0.00142	0.000165	0.0257
TC-V-116	Red Raspberry	Berries	0.0627	0.0128	1.62	3.98	0.100	0.100	0.0132	0.0671	0.0100	0.0238	0.0000825	0.00182	0.000134	0.0511
TC-V-086	Highbush Cranberry	Berries	0.0373	0.00634	0.839	2.08	0.100	0.0333	0.0106	0.0789	0.0100	0.0172	0.000104	0.00151	0.000118	0.0172
TC-V-088	Red Raspberry	Berries	0.0920	0.0137	1.79	2.05	0.100	0.0333	0.0106	0.0711	0.0100	0.0172	0.000104	0.00151	0.000118	0.0559
TC-V-138	Highbush Cranberry	Berries	0.00685	0.00280	0.417	3.83	0.100	0.0385	0.00952	0.0686	0.0100	0.0222	0.0000704	0.00180	0.000154	0.0162
TC-V-049	Black Huckleberry	Berries	0.00685	0.000269	0.00607	0.128	0.100	0.0385	0.00952	0.000245	0.0100	0.0222	0.0000704	0.00180	0.000154	0.000692
TC-V-008	Black Twinberry	Berries	0.109	0.0195	2.14	4.28	0.100	0.100	0.00382	0.0837	0.0100	0.0196	0.0000710	0.00157	0.000136	0.0495
TC-V-030	Devils Club	Berries	0.00980	0.00136	0.120	0.606	0.100	0.0294	0.0119	0.00569	0.0100	0.0213	0.0000483	0.00219	0.000137	0.00189
Site-wide Average BCF		Leaves/Stems	0.340	0.0258	2.16	7.14	0.251	0.0664	0.0338	0.602	0.0143	0.0349	0.00176	0.00166	0.000490	0.135
Site-wide Average BCF		Berries	0.186	0.00897	0.720	1.90	0.114	0.0618	0.00978	0.0448	0.0100	0.0236	0.0000888	0.00167	0.000151	0.0210

Appendix A-7: Extrapolated Baseline Berry COPC Concentration at Soil Sites Outside of the Project Footprint, mg/kg wet weight

Metal Parameter	Extrapolated Baseline Berry COPC Concentration at Soil Sites Outside of the Project Footprint (mg/kg wet weight)																		
	IR213	IR214	IR218	IR225	IR227	TC-001	TC-004	TC-005	TC-006	TC-007	TC-008	TC-013	TC-028	TC-029	TC-031	TC-035	TC-036	TC-038	TC-039
Aluminum	0.535	0.608	0.568	1.76	0.613	0.559	0.711	0.788	1.21	0.572	0.760	0.617	0.576	0.747	0.678	0.694	0.564	0.670	0.792
Arsenic	0.00325	0.00361	0.00324	0.00233	0.00182	0.000912	0.00302	0.00272	0.00365	0.00235	0.00178	0.00330	0.00192	0.00285	0.00264	0.00468	0.00454	0.00454	0.00245
Barium	1.21	1.43	1.23	4.87	1.71	2.26	1.76	1.80	5.98	1.78	4.33	1.96	1.17	1.23	1.49	2.51	2.33	3.22	1.31
Boron	1.14	2.61	2.73	1.14	1.14	7.28	4.21	5.57	3.75	3.52	4.77	3.18	2.84	2.96	2.61	2.50	5.34	1.14	3.18
Cadmium	0.00849	0.00722	0.00617	0.0149	0.00407	0.0295	0.0118	0.00887	0.0218	0.00693	0.0252	0.00731	0.00496	0.00385	0.00289	0.0118	0.0129	0.0146	0.00515
Chromium	0.00612	0.00685	0.00603	0.0117	0.00670	0.00571	0.00836	0.00784	0.00918	0.00665	0.00475	0.00729	0.00571	0.00682	0.00606	0.00682	0.00498	0.00621	0.00563
Cobalt	0.00263	0.00357	0.00286	0.00511	0.00239	0.00249	0.00442	0.00451	0.00375	0.00309	0.00111	0.00372	0.00215	0.00256	0.00226	0.00478	0.00348	0.00451	0.00363
Iron	3.54	3.97	3.50	4.52	3.24	2.58	4.54	4.36	4.31	3.57	1.66	3.78	3.41	4.01	3.77	5.00	3.27	4.60	4.27
Lithium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	8.14	11.1	8.64	16.3	4.40	9.91	10.5	13.8	18.2	10.6	5.40	11.7	5.04	5.33	5.56	16.7	11.8	15.4	13.5
Mercury	0.00100	0.00100	0.00100	0.00375	0.00100	0.00100	0.00100	0.00225	0.00900	0.00100	0.0119	0.00100	0.00100	0.00100	0.00100	0.00100	0.00250	0.00220	0.00100
Molybdenum	0.171	0.156	0.115	0.104	0.0854	0.123	0.0687	0.0854	0.149	0.0761	0.115	0.100	0.0910	0.0929	0.180	0.260	0.188	0.273	0.0910
Nickel	0.172	0.196	0.187	0.294	0.145	0.126	0.165	0.194	0.255	0.161	0.126	0.171	0.128	0.156	0.141	0.208	0.173	0.202	0.152
Selenium	0.0114	0.0114	0.0114	0.0114	0.0114	0.0262	0.0114	0.0114	0.0466	0.0114	0.0728	0.0114	0.0114	0.0114	0.0114	0.0114	0.0114	0.0239	0.0114
Strontium	1.36	1.29	1.57	2.54	1.52	2.84	2.25	3.62	3.62	1.62	9.10	1.50	1.38	0.672	0.901	1.71	2.76	1.73	2.71
Thallium	0.000500	0.000500	0.000500	0.00200	0.000500	0.000500	0.000500	0.000500	0.00150	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500
Zinc	1.80	1.59	1.84	2.08	1.17	3.83	1.48	1.52	1.87	1.43	0.608	2.01	1.16	1.52	1.55	2.33	2.44	2.36	1.88

Notes:

mg/kg = milligram per kilogram; 95% UCLM = 95 percent upper confidence limit of the mean

Appendix A-7: Extrapolated Baseline Berry COPC Concentration at Soil Sites Outside of the Project Footprint, mg/kg wet weight

Metal Parameter	Extrapolated Baseline Berry COPC Concentration at Soil Sites Outside of the Project Footprint (mg/kg wet weight)											Berry Quality Summary Statistics (mg/kg wet weight)						
	TC-040	TC-043	TC-049	TC-051	TC-058	TC-060	TC-061	TC-062	TC-064	TC-065	TC-066	Number of Sites	Minimum	Mean	Median	95% UCLM	95th Percentile	Maximum
Aluminum	0.772	0.964	0.580	0.641	0.764	0.296	0.625	0.641	0.657	0.559	0.523	30	0.296	0.701	0.641	0.792	1.10	1.76
Arsenic	0.00245	0.00210	0.00255	0.00231	0.00320	0.00104	0.00348	0.00368	0.00317	0.00334	0.00263	30	0.000912	0.00285	0.00278	0.00316	0.00454	0.00468
Barium	2.07	2.62	1.47	2.25	1.49	0.934	3.08	1.76	1.25	1.76	3.84	30	0.934	2.20	1.77	2.71	4.63	5.98
Boron	3.07	2.96	2.73	2.39	2.61	1.14	3.30	1.14	1.14	3.07	1.14	30	1.14	2.88	2.79	3.29	5.47	7.28
Cadmium	0.00770	0.00598	0.00607	0.00477	0.00607	0.00464	0.0458	0.0191	0.00375	0.00910	0.0187	30	0.00289	0.0113	0.00751	0.0142	0.0276	0.0458
Chromium	0.00577	0.00705	0.00673	0.00784	0.00682	0.00256	0.00627	0.00717	0.00676	0.00711	0.00702	30	0.00256	0.00669	0.00675	0.00719	0.00881	0.0117
Cobalt	0.00339	0.00445	0.00348	0.00427	0.00309	0.000823	0.00454	0.00402	0.00336	0.00439	0.00348	30	0.000823	0.00341	0.00348	0.00378	0.00467	0.00511
Iron	3.72	4.13	3.46	3.84	3.39	1.05	3.51	3.46	4.45	4.75	3.77	30	1.05	3.71	3.77	3.97	4.68	5.00
Lithium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	14.5	24.8	11.4	20.7	7.16	1.33	20.3	14.4	8.57	11.0	14.8	30	1.33	11.7	11.3	14.0	20.6	24.8
Mercury	0.00100	0.00100	0.00100	0.00235	0.00100	0.00225	0.00100	0.00100	0.00100	0.00100	0.00100	30	0.00100	0.00194	0.00100	0.00273	0.00664	0.0119
Molybdenum	0.126	0.195	0.119	0.123	0.145	0.0706	0.139	0.126	0.134	0.191	0.240	30	0.0687	0.138	0.124	0.154	0.251	0.273
Nickel	0.149	0.196	0.160	0.157	0.184	0.0897	0.200	0.200	0.159	0.191	0.136	30	0.0897	0.172	0.168	0.190	0.234	0.294
Selenium	0.0114	0.0114	0.0114	0.0114	0.0114	0.0114	0.0114	0.0114	0.0114	0.0114	0.0114	30	0.0114	0.0155	0.0114	0.0199	0.0374	0.0728
Strontium	1.53	2.33	1.60	1.52	2.18	2.17	1.98	1.64	0.775	1.79	1.52	30	0.672	2.12	1.68	2.61	3.62	9.10
Thallium	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	0.000500	30	0.000500	0.000583	0.000500	0.000713	0.00105	0.00200
Zinc	2.52	2.67	1.63	2.02	1.46	0.591	4.82	2.54	1.72	1.91	2.92	30	0.591	1.98	1.85	2.20	3.42	4.82

Notes:

mg/kg = milligram per kilogram; 95% UCLM = 95 percent upper confidence limit of the mean

Appendix A-8: Extrapolated Baseline Leaf/Stem COPC Concentration at Soil Sites Outside of the Project Footprint, mg/kg wet weight

Contaminant of Potential Concern	Extrapolated Baseline Stems and Leaves COPC Concentration at Soil Sites Outside of the Project Footprint (mg/kg wet weight)																		
	IR213	IR214	IR218	IR225	IR227	TC-001	TC-004	TC-005	TC-006	TC-007	TC-008	TC-013	TC-028	TC-029	TC-031	TC-035	TC-036	TC-038	TC-039
Aluminum	7.21	8.20	7.65	23.7	8.26	7.54	9.58	10.6	16.4	7.71	10.2	8.31	7.76	10.1	9.14	9.36	7.60	9.03	10.7
Arsenic	0.0168	0.0187	0.0168	0.0121	0.00943	0.00473	0.0157	0.0141	0.0189	0.0122	0.00921	0.0171	0.00998	0.0148	0.0137	0.0243	0.0236	0.0236	0.0127
Barium	10.2	12.0	10.3	40.8	14.3	18.9	14.7	15.1	50.1	14.9	36.3	16.4	9.80	10.3	12.5	21.0	19.5	27.0	10.9
Boron	3.75	8.64	9.01	3.75	3.75	24.0	13.9	18.4	12.4	11.6	15.8	10.5	9.39	9.76	8.64	8.26	17.6	3.75	10.5
Cadmium	0.0496	0.0421	0.0360	0.0869	0.0238	0.172	0.0689	0.0518	0.127	0.0405	0.147	0.0427	0.0290	0.0225	0.0169	0.0687	0.0754	0.0850	0.0301
Chromium	0.0810	0.0906	0.0798	0.155	0.0887	0.0756	0.111	0.104	0.121	0.0879	0.0629	0.0964	0.0756	0.0902	0.0802	0.0902	0.0659	0.0821	0.0744
Cobalt	0.0385	0.0524	0.0419	0.0750	0.0351	0.0366	0.0648	0.0661	0.0550	0.0453	0.0163	0.0546	0.0316	0.0375	0.0332	0.0701	0.0510	0.0661	0.0533
Iron	29.6	33.1	29.3	37.8	27.1	21.5	37.9	36.5	36.0	29.8	13.9	31.6	28.5	33.5	31.5	41.8	27.3	38.5	35.7
Lithium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	31.8	43.3	33.8	63.7	17.2	38.7	41.1	53.8	71.1	41.5	21.1	45.7	19.7	20.8	21.7	65.2	46.2	60.2	52.8
Mercury	0.00140	0.00140	0.00140	0.00525	0.00140	0.00140	0.00140	0.00315	0.0126	0.00140	0.0166	0.00140	0.00140	0.00140	0.00140	0.00140	0.00350	0.00308	0.00140
Molybdenum	0.312	0.285	0.211	0.190	0.156	0.224	0.126	0.156	0.272	0.139	0.211	0.183	0.166	0.170	0.329	0.475	0.343	0.499	0.166
Nickel	0.495	0.564	0.539	0.845	0.418	0.361	0.474	0.557	0.732	0.464	0.361	0.492	0.369	0.448	0.405	0.598	0.497	0.580	0.436
Selenium	0.0251	0.0251	0.0251	0.0251	0.0251	0.0577	0.0251	0.0251	0.103	0.0251	0.160	0.0251	0.0251	0.0251	0.0251	0.0251	0.0251	0.0527	0.0251
Strontium	18.3	17.3	21.1	34.2	20.5	38.1	30.3	48.7	48.6	21.7	122	20.1	18.5	9.03	12.1	23.0	37.1	23.2	36.4
Thallium	0.000713	0.000713	0.000713	0.00285	0.000713	0.000713	0.000713	0.000713	0.00214	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713
Zinc	11.5	10.2	11.8	13.3	7.48	24.5	9.47	9.71	12.0	9.16	3.89	12.9	7.45	9.73	9.90	15.0	15.6	15.1	12.0

Notes:

mg/kg = milligram per kilogram; 95% UCLM = 95 percent upper confidence limit of the mean

Appendix A-8: Extrapolated Baseline Leaf/Stem COPC Concentration at Soil Sites Outside of the Project Footprint, mg/kg wet weight

Contaminant of Potential Concern	Extrapolated Baseline Stems and Leaves COPC Concentration at Soil Sites Outside of the Project Footprint (mg/kg wet weight)											Leaves/Stems Quality Summary Statistics (mg/kg wet weight)						
	TC-040	TC-043	TC-049	TC-051	TC-058	TC-060	TC-061	TC-062	TC-064	TC-065	TC-066	Number of Sites	Minimum	Mean	Median	95% UCLM	95th Percentile	Maximum
Aluminum	10.4	13.0	7.82	8.64	10.3	3.99	8.42	8.64	8.86	7.54	7.05	30	3.99	9.46	8.64	10.7	14.8	23.7
Arsenic	0.0127	0.0109	0.0132	0.0120	0.0166	0.00541	0.0180	0.0191	0.0165	0.0173	0.0137	30	0.00473	0.0148	0.0144	0.0165	0.0236	0.0243
Barium	17.4	21.9	12.3	18.8	12.5	7.82	25.8	14.7	10.5	14.7	32.1	30	7.82	18.5	14.8	22.0	38.7	50.1
Boron	10.1	9.76	9.01	7.89	8.64	3.75	10.9	3.75	3.75	10.1	3.75	30	3.75	9.50	9.20	11.3	18.1	24.0
Cadmium	0.0449	0.0349	0.0355	0.0279	0.0355	0.0271	0.267	0.112	0.0219	0.0531	0.109	30	0.0169	0.0662	0.0438	0.0858	0.161	0.267
Chromium	0.0764	0.0933	0.0891	0.104	0.0902	0.0339	0.0829	0.0949	0.0895	0.0941	0.0929	30	0.0339	0.0885	0.0893	0.0957	0.117	0.155
Cobalt	0.0497	0.0653	0.0510	0.0626	0.0453	0.0121	0.0666	0.0590	0.0493	0.0644	0.0510	30	0.0121	0.0500	0.0510	0.0555	0.0685	0.0750
Iron	31.1	34.5	28.9	32.1	28.4	8.80	29.4	28.9	37.2	39.7	31.5	30	8.80	31.1	31.5	33.6	39.1	41.8
Lithium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	56.8	96.8	44.7	81.0	28.0	5.18	79.5	56.3	33.5	42.9	57.8	30	5.18	45.7	44.0	53.3	80.3	96.8
Mercury	0.00140	0.00140	0.00140	0.00329	0.00140	0.00315	0.00140	0.00140	0.00140	0.00140	0.00140	30	0.00140	0.00271	0.00140	0.00393	0.00929	0.0166
Molybdenum	0.231	0.357	0.217	0.224	0.265	0.129	0.255	0.231	0.245	0.350	0.438	30	0.126	0.252	0.228	0.287	0.459	0.499
Nickel	0.428	0.564	0.459	0.451	0.528	0.258	0.575	0.575	0.456	0.549	0.392	30	0.258	0.496	0.483	0.537	0.672	0.845
Selenium	0.0251	0.0251	0.0251	0.0251	0.0251	0.0251	0.0251	0.0251	0.0251	0.0251	0.0251	30	0.0251	0.0342	0.0251	0.0444	0.0825	0.160
Strontium	20.6	31.4	21.4	20.5	29.3	29.2	26.6	22.0	10.4	24.1	20.5	30	9.03	28.6	22.5	35.8	48.7	122
Thallium	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	0.000713	30	0.000713	0.000832	0.000713	0.000998	0.00150	0.00285
Zinc	16.2	17.1	10.5	12.9	9.38	3.79	30.9	16.3	11.0	12.2	18.7	30	3.79	12.7	11.9	14.6	21.9	30.9

Notes:

mg/kg = milligram per kilogram; 95% UCLM = 95 percent upper confidence limit of the mean

Appendix A-9: Future Concentrations of Contaminants of Potential Concern in Vegetation

Contaminant of Potential Concern (COPC)	95% UCLM Baseline Soil Concentration (mg/kg dw)	90th Percentile Predicted Dust Deposition (g/m ² -year)	Incremental Increase in Soil Concentration (mg/kg dw)	Predicted Soil Concentration (mg/kg dw)	LSA-wide BCFs		Predicted Vegetation Quality from Root Uptake (mg/kg ww) (Closure)		Predicted Vegetation Quality from Dust Deposition (mg/kg ww)		Total Predicted Vegetation Quality (mg/kg ww) (Operation)	
					Berries	Leaves / Stems	Berries	Leaves / Stems	Berries	Leaves / Stems	Berries	Leaves / Stems
Aluminum	19404	0.0832	62.4	19466	0.0000408	0.000551	0.795	10.7	2.98	3.64	3.77	14.4
Arsenic	9.24	0.0000485	0.0364	9.28	0.000344	0.00179	0.00319	0.0166	0.00174	0.00212	0.00493	0.0187
Barium	254	0.000979	0.734	255	0.0104	0.0868	2.64	22.1	0.0350	0.0429	2.67	22.1
Boron	3.00	0.0000624	0.0468	3.05	1.14	3.75	3.46	11.4	0.00223	0.00273	3.47	11.4
Cadmium	0.462	0.00000261	0.00196	0.464	0.0318	0.186	0.0148	0.0862	0.0000934	0.000114	0.0149	0.0863
Chromium	24.8	0.000190	0.143	25.0	0.000291	0.00386	0.00727	0.0962	0.00681	0.00833	0.0141	0.105
Cobalt	12.5	0.0000544	0.0408	12.5	0.000303	0.00444	0.00379	0.0557	0.00195	0.00238	0.00574	0.0581
Iron	36438	0.148	111	36549	0.000110	0.000921	4.03	33.7	5.29	6.47	9.32	40.1
Lithium	13.5	0	0	13.5	0.00625	0.00625	0.0842	0.0842	0	0	0.0842	0.0842
Manganese	1079	0.00321	2.41	1081	0.0126	0.0494	13.7	53.4	0.115	0.141	13.8	53.5
Mercury	0.0562	0.0000248	0.0186	0.0748	0.0500	0.0700	0.00374	0.00523	0.000886	0.00108	0.00462	0.00631
Molybdenum	0.846	0.00000748	0.00561	0.852	0.186	0.340	0.158	0.289	0.000268	0.000327	0.158	0.290
Nickel	20.8	0.000117	0.0875	20.9	0.00897	0.0258	0.187	0.539	0.00417	0.00510	0.192	0.544
Selenium	0.177	0.00000142	0.00107	0.178	0.114	0.251	0.0203	0.0447	0.0000508	0.0000622	0.0203	0.0447
Strontium	59.4	0.000232	0.174	59.6	0.0448	0.602	2.67	35.9	0.00830	0.0101	2.68	35.9
Thallium	0.0699	0.0000792	0.0594	0.129	0.0100	0.0143	0.00129	0.00185	0.00284	0.00347	0.00413	0.00531
Zinc	108	0.000401	0.301	109	0.0210	0.135	2.29	14.6	0.0143	0.0175	2.30	14.7

Notes:

dw = dry weight

ww = wet weight

A dust deposition value of "0" indicates that this parameter was not predicted.

Appendix A-11: Baseline Fish Tissue Quality Data

Client Sample ID:	Lowest Detection Limit	Units	Tissue Guidelines (µg/g wwt)	WQS01-RB11	WQS01-RB12	WQS01-RB13	WQS01-RB14	WQS01-RB15	WQS01-RB16	WQS01-11	WQS01-12	WQS01-13	WQS01-14	WQS01-15	WQS01-16	WQS01-17	WQS01-18	WQS01				
Date Sampled:				12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	Statistical Summary				
Time Sampled:				11:30	11:31	11:35	11:38	11:43	11:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	Minimum	Average	Maximum	SE	95% UCLM ⁽¹⁾
ALS Sample ID:				L2120822-1	L2120822-2	L2120822-3	L2120822-4	L2120822-5	L2120822-6	L2019410-9	L2019410-10	L2019410-11	L2019410-12	L2019410-13	L2019410-14	L2019410-15	L2019410-16					
Parameter																						
Physical Tests (Tissue)																						
% Moisture	0.50	%		76.7	77.5	76.5	78.7	78.7	75.9	77.8	76.4	76.6	76.2	77.0	78.3	78.1	78.0	75.9	77.3	78.7	0.3	77.8
Metals (Tissue)																						
Aluminum (Al)-Total	0.40	mg/kg wwt		33.2	8.23	7.84	38.5	35.0	110	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.2	16.9	110.0	8.1	32.8
Antimony (Sb)-Total	0.0020	mg/kg wwt		0.0047	0.001	0.001	0.0031	0.0027	0.0035	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0010	0.0017	0.0047	0.0003	0.0024
Arsenic (As)-Total	0.0040	mg/kg wwt		0.0693	0.0485	0.0331	0.0620	0.0615	0.115	0.0155	0.0300	0.0421	0.0472	0.0205	0.0206	0.0422	0.0265	0.0155	0.0453	0.1150	0.0070	0.0590
Barium (Ba)-Total	0.010	mg/kg wwt		1.23	1.44	1.57	1.77	3.66	1.52	0.230	0.211	0.227	0.136	0.106	0.097	0.184	0.131	0.10	0.89	3.66	0.28	1.44
Beryllium (Be)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0010	0.0010	0.0010	0.0000	0.0010
Bismuth (Bi)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.0111	0.001	0.001	0.184	0.001	0.0022	0.001	0.001	0.0010	0.0149	0.1840	0.0130	0.0404
Boron (B)-Total	0.20	mg/kg wwt		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1000	0.1000	0.1000	0.0000	NC
Cadmium (Cd)-Total	0.0010	mg/kg wwt		0.0299	0.0801	0.0134	0.0314	0.0236	0.0580	0.0041	0.0023	0.001	0.001	0.001	0.0011	0.001	0.001	0.0010	0.0178	0.0801	0.0066	0.0308
Calcium (Ca)-Total	4.0	mg/kg wwt		5250	7290	7100	7960	7720	6690	890	981	1300	604	729	507	547	819	507.0	3456.2	7960.0	868.1	5157.7
Cesium (Cs)-Total	0.0010	mg/kg wwt		0.175	0.166	0.172	0.161	0.176	0.209	0.193	0.294	0.241	0.343	0.214	0.205	0.221	0.292	0.161	0.219	0.343	0.015	0.248
Chromium (Cr)-Total	0.010	mg/kg wwt		0.111	0.078	0.056	0.118	0.108	0.214	0.079	0.02	0.02	0.044	0.02	0.034	0.040	0.02	0.020	0.069	0.214	0.015	0.098
Cobalt (Co)-Total	0.0040	mg/kg wwt		0.0398	0.0324	0.0245	0.0644	0.0605	0.0895	0.0161	0.0162	0.0157	0.0114	0.0079	0.0102	0.0201	0.0154	0.008	0.030	0.090	0.007	0.043
Copper (Cu)-Total	0.020	mg/kg wwt		0.814	0.828	0.754	0.875	0.785	1.04	0.350	0.345	0.341	0.444	0.368	0.394	0.410	0.362	0.341	0.579	1.040	0.067	0.711
Iron (Fe)-Total	0.60	mg/kg wwt		97.5	23.5	21.1	87.3	74.2	179	3.5	3.4	3.2	4.9	4.0	3.54	4.4	3.1	3.1	36.6	179.0	14.3	64.6
Lead (Pb)-Total	0.0040	mg/kg wwt		0.0131	0.0042	0.002	0.0132	0.0087	0.0214	0.005	0.005	0.005	0.005	0.005	0.002	0.005	0.005	0.002	0.007	0.021	0.001	0.010
Lithium (Li)-Total	0.10	mg/kg wwt		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.050	0.050	0.050	0.000	NC
Magnesium (Mg)-Total	0.40	mg/kg wwt		312	334	305	336	351	389	277	262	281	273	253	277	252	268	252.0	297.9	389.0	11.0	319.5
Manganese (Mn)-Total	0.010	mg/kg wwt		3.28	2.16	3.41	4.51	2.71	5.26	0.446	0.366	0.377	1.41	0.310	0.185	0.219	0.276	0.2	1.8	5.3	0.5	2.7
Mercury (Hg)-Total	0.0010	mg/kg wwt	0.1 ⁽²⁾	0.0202	0.0198	0.0153	0.0193	0.0182	0.0203	0.0138	0.0155	0.0193	0.0199	0.0188	0.0209	0.0201	0.0121	0.0121	0.0181	0.0209	0.0007	0.0196
Molybdenum (Mo)-Total	0.0040	mg/kg wwt		0.0116	0.0104	0.0102	0.0125	0.0098	0.0119	0.004	0.004	0.004	0.004	0.004	0.002	0.004	0.004	0.0020	0.0069	0.0125	0.0010	0.0089
Nickel (Ni)-Total	0.040	mg/kg wwt		0.059	0.050	0.077	0.061	0.043	0.130	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.0200	0.0414	0.1300	0.0086	0.0583
Phosphorus (P)-Total	2.0	mg/kg wwt		5260	6460	6070	6540	6600	6150	2550	2450	2750	2320	2150	2500	2270	2420	2150.0	4035.0	6600.0	523.1	5060.2
Potassium (K)-Total	4.0	mg/kg wwt		3340	3160	2870	3020	3140	3450	4010	3570	3690	3990	3790	3870	3870	3820	2870.0	3542.1	4010.0	101.6	3741.2
Rubidium (Rb)-Total	0.010	mg/kg wwt		2.94	2.43	2.33	2.31	2.67	3.15	3.73	4.49	4.17	4.64	3.49	3.67	4.39	4.49	2.3	3.5	4.6	0.2	3.9
Selenium (Se)-Total	0.010	mg/kg wwt	1.8 ⁽³⁾	0.528	0.509	0.550	0.579	0.665	0.731	0.554	0.535	0.635	0.559	0.584	0.439	0.687	0.395	0.395	0.568	0.731	0.024	0.616
Silver (Ag)-Total	0.0010	mg/kg wwt		-	-	-	-	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	NC
Sodium (Na)-Total	4.0	mg/kg wwt		964	1010	955	1160	1140	1010	593	567	632	575	562	596	623	548	548.0	781.1	1160.0	64.1	906.8
Strontium (Sr)-Total	0.010	mg/kg wwt		4.51	5.98	6.60	6.77	5.96	5.32	0.688	0.884	1.25	0.456	0.427	0.344	0.496	0.683	0.3	2.9	6.8	0.7	4.3
Tellurium (Te)-Total	0.0040	mg/kg wwt		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.000	0.002
Thallium (Tl)-Total	0.00040	mg/kg wwt		0.00293	0.00284	0.00316	0.00378	0.00454	0.00365	0.00257	0.00336	0.00278	0.00409	0.00257	0.00321	0.00356	0.00429	0.003	0.003	0.005	0.000	0.004
Tin (Sn)-Total	0.020	mg/kg wwt		0.01	0.01	0.01	0.01	0.01	0.01	0.050	0.01	0.01	0.01	0.01	0.01	0.025	0.01	0.010	0.014	0.050	0.003	0.020
Uranium (U)-Total	0.00040	mg/kg wwt		0.00275	0.00075	0.00080	0.00222	0.00197	0.00342	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0010	0.0034	0.0003	0.0016
Vanadium (V)-Total	0.020	mg/kg wwt		0.274	0.068	0.055	0.219	0.197	0.475	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.010	0.098	0.475	0.038	0.172
Zinc (Zn)-Total	0.10	mg/kg wwt		23.4	26.0	23.0	29.5	27.2	25.4	6.34	7.07	9.50	6.47	5.86	5.59	7.19	5.50	5.5	14.9	29.5	2.7	20.1
Zirconium (Zr)-Total	0.040	mg/kg wwt		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.0200	0.0237	0.0720	0.0037	0.0310

Notes:

SE - Standard Error

95% UCLM - 95 percent upper confidence limit of the mean

wwt - wet weight

Bold - Half the detection limit concentration

Grey highlight - Concentrations greater than the BC Tissue Guideline

(1) assumes data is normally distributed

(2) Most conservative guideline based on a high weekly consumption of fish of 1050 g. BC ENV 2001. Ambient Water Quality Guidelines for Mercury. Overview Report — First Update. Available at <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/mercury-or.pdf>

(3) Most conservative guideline based on high fish intake (0.22 kg/day). BC ENV 2014. Ambient Water Quality Guideline for Selenium - Technical Report Update. Available at https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/bc_moe_se_wqg.pdf

"-" no data

NC - Not calculated

Appendix A-11: Baseline Fish Tissue Quality Data

Client Sample ID:	Lowest Detection Limit	Units	Tissue Guidelines (µg/g wwt)	WQS02-RB1	WQS02-RB2	WQS02-RB3	WQS02-RB4	WQS02-RB5	WQS02-RB6	WQS02-RB7	WQS02-RB8	WQS02-10	WQS02-11	WQS02-12	WQS02-13	WQS02-14	WQS02-15	WQS02-16	WQS02-17	WQS02						
Date Sampled:				19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	Statistical Summary				
Time Sampled:				10:02	10:03	10:10	10:12	10:15	10:23	10:24	10:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	Minimum	Average	Maximum	SE	95% UCLM ⁽¹⁾
ALS Sample ID:				L2120822-7	L2120822-8	L2120822-9	L2120822-10	L2120822-11	L2120822-12	L2120822-13	L2120822-14	L2019410-41	L2019410-42	L2019410-43	L2019410-44	L2019410-45	L2019410-46	L2019410-47	L2019410-48							
Parameter																										
Physical Tests (Tissue)																										
% Moisture	0.50	%		78.6	76.8	77.3	76.3	76.9	77.1	76.9	77.2	78.9	78.0	77.2	76.5	76.2	76.0	76.7	77.3	76.0	77.1	78.9	0.2	77.5		
Metals (Tissue)																										
Aluminum (Al)-Total	0.40	mg/kg wwt		22.3	20.6	13.1	19.8	50.5	22.7	30.8	22.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12.9	50.5	3.7	20.2		
Antimony (Sb)-Total	0.0020	mg/kg wwt		0.0022	0.0020	0.001	0.0021	0.0032	0.001	0.0023	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00100	0.00143	0.00320	0.00017	0.00177		
Arsenic (As)-Total	0.0040	mg/kg wwt		0.0558	0.0985	0.0481	0.0812	0.127	0.106	0.129	0.0510	0.0213	0.0256	0.0296	0.0370	0.0523	0.0494	0.0527	0.0373	0.02130	0.06261	0.12900	0.00873	0.07973		
Barium (Ba)-Total	0.010	mg/kg wwt		1.33	1.27	1.27	1.23	1.79	0.996	1.32	1.46	0.125	0.337	0.107	0.071	0.095	0.178	0.140	0.204	0.071	0.745	1.790	0.157	1.054		
Beryllium (Be)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00100	0.00100	0.00100	0.00000	0.00100		
Bismuth (Bi)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00100	0.00100	0.00100	0.00000	0.00100		
Boron (B)-Total	0.20	mg/kg wwt		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.100	0.100	0.100	0.000	0.100		
Cadmium (Cd)-Total	0.0010	mg/kg wwt		0.0218	0.0271	0.0172	0.0261	0.0242	0.0303	0.0349	0.0177	0.001	0.0028	0.001	0.001	0.0024	0.001	0.001	0.001	0.00100	0.01316	0.03490	0.00321	0.01945		
Calcium (Ca)-Total	4.0	mg/kg wwt		6090	7110	5820	5650	6930	5210	7490	6970	613	1600	653	476	438	601	374	1360	374.0	3586.6	7490.0	746.1	5048.9		
Cesium (Cs)-Total	0.0010	mg/kg wwt		0.112	0.0908	0.0396	0.0808	0.0906	0.101	0.129	0.104	0.132	0.146	0.144	0.189	0.181	0.160	0.208	0.190	0.0396	0.1311	0.2080	0.0117	0.1540		
Chromium (Cr)-Total	0.010	mg/kg wwt		0.070	0.124	0.036	0.069	0.108	0.111	0.090	0.059	0.050	0.068	0.02	0.040	0.02	0.068	0.02	0.0200	0.0608	0.1240	0.0086	0.0776			
Cobalt (Co)-Total	0.0040	mg/kg wwt		0.0356	0.0525	0.0313	0.0405	0.0638	0.0436	0.0642	0.0380	0.0099	0.0185	0.0100	0.0175	0.0129	0.0099	0.0104	0.0222	0.0099	0.0301	0.0642	0.0048	0.0394		
Copper (Cu)-Total	0.020	mg/kg wwt		1.07	0.912	0.818	1.02	0.982	0.854	1.02	0.757	0.407	0.415	0.370	0.531	0.515	0.339	0.527	0.352	0.3390	0.6806	1.0700	0.0683	0.8145		
Iron (Fe)-Total	0.60	mg/kg wwt		41.2	39.8	32.9	37.4	110	39.7	50.2	48.2	4.3	5.4	4.1	4.4	4.9	3.5	5.0	3.6	3.5	27.2	110.0	7.3	41.4		
Lead (Pb)-Total	0.0040	mg/kg wwt		0.0065	0.0061	0.002	0.0055	0.0124	0.0060	0.0077	0.0060	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.00	0.01	0.01	0.00	0.01		
Lithium (Li)-Total	0.10	mg/kg wwt		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.05		
Magnesium (Mg)-Total	0.40	mg/kg wwt		323	325	330	308	361	333	394	353	263	293	258	232	241	295	259	291	232.0	303.7	394.0	11.4	326.1		
Manganese (Mn)-Total	0.010	mg/kg wwt		4.49	3.73	8.36	3.88	9.18	2.89	3.38	7.12	0.314	0.604	0.297	0.160	0.208	0.386	0.211	0.536	0.160	2.859	9.180	0.775	4.378		
Mercury (Hg)-Total	0.0010	mg/kg wwt	0.1 ⁽²⁾	0.0164	0.0179	0.0487	0.0357	0.0160	0.0161	0.0154	0.0179	0.0297	0.0145	0.0216	0.0181	0.0187	0.0188	0.0214	0.0211	0.0145	0.0218	0.0487	0.0023	0.0262		
Molybdenum (Mo)-Total	0.0040	mg/kg wwt		0.0103	0.0124	0.0104	0.0130	0.0119	0.0123	0.0148	0.0109	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.0040	0.0080	0.0148	0.0011	0.0101		
Nickel (Ni)-Total	0.040	mg/kg wwt		0.02	0.02	0.02	0.02	0.074	0.02	0.045	0.02	0.02	0.056	0.02	0.02	0.02	0.02	0.02	0.02	0.0200	0.0272	0.0740	0.0041	0.0352		
Phosphorus (P)-Total	2.0	mg/kg wwt		5900	6300	5750	5530	6420	5530	7200	6530	2330	2880	2280	2060	2100	2570	2160	2810	2060.0	4271.9	7200.0	496.6	5245.1		
Potassium (K)-Total	4.0	mg/kg wwt		3460	2960	3270	3080	3390	3540	3730	3310	3840	3960	3590	3810	3680	4290	4090	4250	2960.0	3640.6	4290.0	98.0	3832.8		
Rubidium (Rb)-Total	0.010	mg/kg wwt		2.57	2.07	1.71	2.01	2.27	2.61	2.97	2.60	2.95	3.30	3.00	4.22	3.74	3.36	3.96	4.05	1.71	2.96	4.22	0.19	3.34		
Selenium (Se)-Total	0.010	mg/kg wwt	1.8 ⁽³⁾	0.660	0.813	0.356	0.632	0.566	0.990	0.905	0.664	0.479	0.480	0.486	0.636	0.710	0.429	0.582	0.551	0.356	0.621	0.990	0.043	0.705		
Silver (Ag)-Total	0.0010	mg/kg wwt		-	-	-	-	-	-	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0	0.0	0.0	0.0	NC		
Sodium (Na)-Total	4.0	mg/kg wwt		1060	1010	922	982	958	1020	1140	1030	536	578	567	598	622	554	635	621	536.0	802.1	1140.0	56.5	912.9		
Strontium (Sr)-Total	0.010	mg/kg wwt		4.93	5.94	4.35	4.44	5.50	4.01	5.51	5.43	0.457	1.45	0.471	0.277	0.293	0.554	0.281	1.18	0.28	2.82	5.94	0.58	3.96		
Tellurium (Te)-Total	0.0040	mg/kg wwt		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.0020	0.0020	0.0020	0.0000	0.0020		
Thallium (Tl)-Total	0.00040	mg/kg wwt		0.00482	0.00484	0.00450	0.00410	0.00449	0.00487	0.00522	0.00444	0.00300	0.00290	0.00300	0.00447	0.00435	0.00407	0.00390	0.00483	0.0029	0.0042	0.0052	0.0002	0.0046		
Tin (Sn)-Total	0.020	mg/kg wwt		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.020	0.044	0.01	0.01	0.0100	0.0128	0.0440	0.0022	0.0170		
Uranium (U)-Total	0.00040	mg/kg wwt		0.00147	0.00119	0.00063	0.00098	0.00287	0.00130	0.00161	0.00129	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0008	0.0029	0.0002	0.0012		
Vanadium (V)-Total	0.020	mg/kg wwt		0.094	0.104	0.073	0.099	0.288	0.089	0.119	0.142	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0100	0.0680	0.2880	0.0190	0.1053		
Zinc (Zn)-Total	0.10	mg/kg wwt		24.5	25.7	21.6	28.1	25.7	23.1	26.9	27.7	5.23	8.53	6.79	6.79	6.07	5.02	5.82	5.84	5.02	15.84	28.10	2.51	20.76		
Zirconium (Zr)-Total	0.040	mg/kg wwt		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.046	0.02	0.02	0.02	0.0200	0.0216	0.0460	0.0016	0.0248		

Notes:

SE - Standard Error

95% UCLM - 95 percent upper confidence limit of the mean

wwt - wet weight

Bold - Half the detection limit concentration

Grey highlight - Concentrations greater than the BC Tissue Guideline

(1) assumes data is normally distributed

(2) Most conservative guideline based on a high weekly consumption of fish of 1050 g. BC ENV 2001. Ambient Water Quality Guidelines for Mercury. Overview Report — First Update. Available at <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/mercury-or.pdf>

(3) Most conservative guideline based on high fish intake (0.22 kg/day). BC ENV 2014. Ambient Water Quality Guideline for Selenium - Technical Report Update. Available at https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/bc_moe_se_wqg.pdf

"-" no data

NC - Not calculated

Appendix A-11: Baseline Fish Tissue Quality Data

Client Sample ID:	Lowest Detection Limit	Units	Tissue Guidelines (µg/g wwt)	WQS05-RB3	WQS05-RB4	WQS05-RB5	WQS05-RB6	WQS05-RB7	WQS05-RB8	WQS05-RB9	WQS05-8	WQS05-9	WQS05-10	WQS05-11	WQS05-12	WQS05-13	WQS05-14	WQS05-15	WQS05				
Date Sampled:				18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	11-Oct-2017	11-Oct-2017	11-Oct-2017	11-Oct-2017	11-Oct-2017	11-Oct-2017	11-Oct-2017	11-Oct-2017	Statistical Summary				
Time Sampled:				14:10	14:15	14:20	14:25	14:25	14:40	14:52	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	Minimum	Average	Maximum	SE	95% UCLM ⁽¹⁾
ALS Sample ID:				L2120822-15	L2120822-16	L2120822-17	L2120822-18	L2120822-19	L2120822-20	L2120822-21	L2019410-1	L2019410-2	L2019410-3	L2019410-4	L2019410-5	L2019410-6	L2019410-7	L2019410-8					
Parameter																							
Physical Tests (Tissue)																							
% Moisture	0.50	%		77.7	79.4	76.9	77.0	77.7	76.6	75.9	78.0	78.1	78.0	77.7	77.9	78.2	78.1	78.6	75.9	77.7	79.4	0.2	78.1
Metals (Tissue)																							
Aluminum (Al)-Total	0.40	mg/kg wwt		19.6	5.57	41.1	25.3	9.63	15.6	16.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.50	9.13	41.10	3.16	15.32
Antimony (Sb)-Total	0.0020	mg/kg wwt		0.001	0.0052	0.0021	0.0035	0.001	0.001	0.0024	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.000	0.002
Arsenic (As)-Total	0.0040	mg/kg wwt		0.0503	0.0397	0.140	0.0498	0.0321	0.0574	0.0347	0.0202	0.0364	0.0176	0.0206	0.0280	0.0171	0.0203	0.0966	0.017	0.044	0.140	0.009	0.061
Barium (Ba)-Total	0.010	mg/kg wwt		1.61	0.984	1.50	2.14	1.81	1.57	3.15	0.327	0.150	0.381	0.136	0.125	0.352	0.250	0.176	0.125	0.977	3.150	0.242	1.451
Beryllium (Be)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.001
Bismuth (Bi)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.001
Boron (B)-Total	0.20	mg/kg wwt		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.100	0.100	0.100	0.000	0.100
Cadmium (Cd)-Total	0.0010	mg/kg wwt		0.0386	0.0146	0.0747	0.0547	0.0631	0.0546	0.0288	0.0139	0.0023	0.0086	0.0054	0.0064	0.0156	0.0177	0.0044	0.002	0.027	0.075	0.006	0.039
Calcium (Ca)-Total	4.0	mg/kg wwt		6250	4340	5960	7480	6880	5770	9950	946	878	1430	566	468	868	1070	511	468.0	3557.8	9950.0	832.5	5189.5
Cesium (Cs)-Total	0.0010	mg/kg wwt		0.0363	0.0277	0.0427	0.0436	0.0561	0.0453	0.0407	0.0961	0.0912	0.0845	0.0998	0.0931	0.101	0.0882	0.0785	0.028	0.068	0.101	0.007	0.082
Chromium (Cr)-Total	0.010	mg/kg wwt		0.085	0.026	0.080	0.053	0.028	0.028	0.086	0.048	0.02	0.131	0.060	0.054	0.02	0.052	0.02	0.020	0.053	0.131	0.008	0.069
Cobalt (Co)-Total	0.0040	mg/kg wwt		0.0455	0.0193	0.126	0.107	0.108	0.0898	0.0346	0.0435	0.0258	0.0194	0.0398	0.0485	0.0365	0.0393	0.0233	0.019	0.054	0.126	0.009	0.072
Copper (Cu)-Total	0.020	mg/kg wwt		1.04	0.609	0.990	1.00	1.11	1.17	0.941	0.487	0.317	0.248	0.459	0.356	0.277	0.368	0.201	0.201	0.638	1.170	0.093	0.820
Iron (Fe)-Total	0.60	mg/kg wwt		40.1	14.3	84.6	57.4	27.9	35.4	42.7	5.6	3.0	4.3	4.7	3.3	3.5	4.3	2.5	2.50	22.24	84.60	6.48	34.95
Lead (Pb)-Total	0.0040	mg/kg wwt		0.0088	0.0048	0.0154	0.0126	0.0115	0.0074	0.0140	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.0048	0.0076	0.0154	0.0010	0.0096
Lithium (Li)-Total	0.10	mg/kg wwt		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.0500	0.0500	0.0500	0.0000	0.0500
Magnesium (Mg)-Total	0.40	mg/kg wwt		342	258	355	377	351	342	358	233	260	263	242	262	259	258	254	233.0	294.3	377.0	13.4	320.5
Manganese (Mn)-Total	0.010	mg/kg wwt		4.33	1.85	3.40	3.15	2.78	2.85	5.42	0.261	0.265	0.571	0.213	0.233	0.556	0.485	0.209	0.21	1.77	5.42	0.45	2.66
Mercury (Hg)-Total	0.0010	mg/kg wwt	0.1 ⁽²⁾	0.0257	0.0140	0.0198	0.0161	0.0158	0.0117	0.0320	0.0199	0.0266	0.0242	0.0251	0.0190	0.0172	0.0192	0.0210	0.0117	0.0205	0.0320	0.0014	0.0232
Molybdenum (Mo)-Total	0.0040	mg/kg wwt		0.0142	0.0092	0.0120	0.0146	0.0182	0.0126	0.0115	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.0040	0.0083	0.0182	0.0013	0.0109
Nickel (Ni)-Total	0.040	mg/kg wwt		0.02	0.02	0.064	0.042	0.02	0.02	0.086	0.02	0.02	0.02	0.02	0.02	0.02	0.042	0.02	0.0200	0.0303	0.0860	0.0052	0.0405
Phosphorus (P)-Total	2.0	mg/kg wwt		6080	4460	5640	6780	6270	5840	7810	2330	2360	2520	2190	2400	2470	2630	2140	2140.0	4128.0	7810.0	529.8	5166.4
Potassium (K)-Total	4.0	mg/kg wwt		3500	2730	3460	3480	3250	3320	2950	3710	4160	3630	3900	3780	4050	3850	3970	2730.0	3582.7	4160.0	104.0	3786.5
Rubidium (Rb)-Total	0.010	mg/kg wwt		1.77	1.28	2.75	2.62	3.01	2.96	1.79	4.77	4.76	3.57	4.96	5.49	4.57	5.57	5.04	1.28	3.66	5.57	0.37	4.39
Selenium (Se)-Total	0.010	mg/kg wwt	1.8 ⁽³⁾	0.665	0.268	0.379	0.377	0.398	0.474	0.463	0.394	0.364	0.310	0.378	0.333	0.305	0.393	0.319	0.268	0.388	0.665	0.024	0.436
Silver (Ag)-Total	0.0010	mg/kg wwt		-	-	-	-	-	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.000	NC
Sodium (Na)-Total	4.0	mg/kg wwt		994	746	930	1000	965	882	942	684	586	606	611	505	574	664	571	505.0	750.7	1000.0	46.6	842.1
Strontium (Sr)-Total	0.010	mg/kg wwt		4.67	3.58	4.25	4.87	4.26	3.81	9.01	0.711	0.539	1.30	0.328	0.301	0.806	0.612	0.282	0.282	2.622	9.010	0.658	3.912
Tellurium (Te)-Total	0.0040	mg/kg wwt		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.0020	0.0020	0.0020	0.0000	0.0020
Thallium (Tl)-Total	0.00040	mg/kg wwt		0.00433	0.00264	0.00718	0.00820	0.00629	0.00693	0.00516	0.00456	0.00427	0.00393	0.00402	0.00568	0.00533	0.00609	0.00527	0.0026	0.0053	0.0082	0.0004	0.0061
Tin (Sn)-Total	0.020	mg/kg wwt		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.025	0.01	0.01	0.020	0.01	0.0100	0.0117	0.0250	0.0012	0.0139
Uranium (U)-Total	0.00040	mg/kg wwt		0.00166	0.0002	0.00195	0.00166	0.00204	0.00109	0.00212	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0008	0.0021	0.0002	0.0012
Vanadium (V)-Total	0.020	mg/kg wwt		0.090	0.031	0.193	0.115	0.048	0.075	0.104	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0100	0.0491	0.1930	0.0143	0.0771
Zinc (Zn)-Total	0.10	mg/kg wwt		27.0	19.1	24.6	27.4	30.3	24.0	28.5	10.0	5.66	7.49	6.00	5.56	6.07	7.66	5.42	5.420	15.651	30.300	2.638	20.822
Zirconium (Zr)-Total	0.040	mg/kg wwt		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.0200	0.0200	0.0200	0.0000	NC

Notes:

SE - Standard Error

95% UCLM - 95 percent upper confidence limit of the mean

wwt - wet weight

Bold - Half the detection limit concentration

Grey highlight - Concentrations greater than the BC Tissue Guideline

(1) assumes data is normally distributed

(2) Most conservative guideline based on a high weekly consumption of fish of 1050 g. BC ENV 2001. Ambient Water Quality Guidelines for Mercury. Overview Report — First Update. Available at <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/mercury-or.pdf>

(3) Most conservative guideline based on high fish intake (0.22 kg/day). BC ENV 2014. Ambient Water Quality Guideline for Selenium - Technical Report Update. Available at https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/bc_moe_se_wqg.pdf

-" no data

NC - Not calculated

Appendix A-11: Baseline Fish Tissue Quality Data

Client Sample ID:	Lowest Detection Limit	Units	Tissue Guidelines (µg/g wwt)	WQS09-RB1	WQS09-RB2	WQS09-RB3	WQS09-RB4	WQS09-RB5	WQS09-RB6	WQS09-RB7	WQS09-6	WQS09-7	WQS09-8	WQS09-9	WQS09-10	WQS09-11	WQS09-12	WQS09-13	WQS09					
Date Sampled:				18-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	Statistical Summary				
Time Sampled:				0:00	10:50	10:52	10:58	10:59	11:10	11:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	Minimum	Average	Maximum	SE	95% UCLM ⁽¹⁾
ALS Sample ID:				L2120822-45	L2120822-22	L2120822-23	L2120822-24	L2120822-25	L2120822-26	L2120822-27	L2019410-33	L2019410-34	L2019410-35	L2019410-36	L2019410-37	L2019410-38	L2019410-39	L2019410-40						
Parameter																								
Physical Tests (Tissue)																								
% Moisture	0.50	%		77.7	77.4	77.2	77.1	76.5	77.3	78.6	79.7	79.3	79.0	79.0	80.0	79.5	79.2	79.2	76.5	78.4	80.0	0.3	79.0	
Metals (Tissue)																								
Aluminum (Al)-Total	0.40	mg/kg wwt		15.6	89.6	11.3	99.6	22.2	69.6	119	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	28.7	119.0	11.0	50.3	
Antimony (Sb)-Total	0.0020	mg/kg wwt		0.001	0.0047	0.001	0.0039	0.0021	0.0033	0.0042	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0010	0.0019	0.0047	0.0004	0.0026	
Arsenic (As)-Total	0.0040	mg/kg wwt		0.0486	0.110	0.0664	0.179	0.0537	0.0834	0.149	0.0147	0.0162	0.0297	0.0211	0.0150	0.0177	0.0237	0.0125	0.013	0.056	0.179	0.014	0.083	
Barium (Ba)-Total	0.010	mg/kg wwt		1.99	2.09	1.54	2.64	1.59	2.97	2.69	0.228	0.208	0.132	0.212	0.336	0.259	0.270	0.170	0.132	1.155	2.970	0.282	1.707	
Beryllium (Be)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.0020	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00100	0.00107	0.00200	0.00007	0.00120	
Bismuth (Bi)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0027	0.001	0.001	0.001	0.001	0.001	0.001	0.00100	0.00111	0.00270	0.00011	0.00134	
Boron (B)-Total	0.20	mg/kg wwt		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.21	0.1	0.100	0.107	0.210	0.007	0.122	
Cadmium (Cd)-Total	0.0010	mg/kg wwt		0.0501	0.0520	0.0432	0.154	0.0345	0.0634	0.0672	0.0108	0.0044	0.0023	0.0090	0.0042	0.0025	0.0037	0.0106	0.002	0.034	0.154	0.011	0.055	
Calcium (Ca)-Total	4.0	mg/kg wwt		7260	5590	5900	6240	5780	7160	6420	712	518	606	678	1200	641	842	464	464.0	3334.1	7260.0	759.8	4823.2	
Cesium (Cs)-Total	0.0010	mg/kg wwt		0.0163	0.0208	0.0165	0.0261	0.0157	0.0200	0.0245	0.0226	0.0527	0.0245	0.0343	0.0346	0.0230	0.0255	0.0273	0.016	0.026	0.053	0.002	0.030	
Chromium (Cr)-Total	0.010	mg/kg wwt		0.035	0.135	0.028	0.133	0.032	0.094	0.160	0.052	0.118	0.02	0.02	0.051	0.049	0.051	0.02	0.020	0.067	0.160	0.012	0.091	
Cobalt (Co)-Total	0.0040	mg/kg wwt		0.0729	0.112	0.0653	0.114	0.0523	0.0962	0.122	0.0202	0.0160	0.0197	0.0369	0.0370	0.0152	0.0279	0.0383	0.015	0.056	0.122	0.010	0.076	
Copper (Cu)-Total	0.020	mg/kg wwt		1.27	1.01	1.43	1.32	1.47	1.23	0.972	0.320	0.264	0.245	0.274	0.325	0.394	0.342	0.409	0.245	0.752	1.470	0.128	1.002	
Iron (Fe)-Total	0.60	mg/kg wwt		35.0	161	32.2	153	44.4	118	212	4.2	2.9	5.9	3.6	4.2	4.1	3.7	5.4	2.9	52.6	212.0	18.4	88.7	
Lead (Pb)-Total	0.0040	mg/kg wwt		0.0169	0.0491	0.0247	0.0614	0.0506	0.0527	0.0600	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.024	0.061	0.006	0.036	
Lithium (Li)-Total	0.10	mg/kg wwt		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.050	0.050	0.050	0.000	0.050	
Magnesium (Mg)-Total	0.40	mg/kg wwt		376	336	328	367	366	384	364	268	258	258	265	297	272	259	265	258.0	310.9	384.0	13.0	336.4	
Manganese (Mn)-Total	0.010	mg/kg wwt		4.27	8.87	7.90	7.78	5.41	8.66	13.0	0.396	0.326	0.422	0.472	0.658	0.421	0.509	0.415	0.326	3.967	13.000	1.110	6.143	
Mercury (Hg)-Total	0.0010	mg/kg wwt	0.1 ⁽²⁾	0.0135	0.0136	0.0165	0.0141	0.0151	0.0144	0.0150	0.0165	0.0167	0.0156	0.0161	0.0236	0.0150	0.0159	0.0184	0.014	0.016	0.024	0.001	0.017	
Molybdenum (Mo)-Total	0.0040	mg/kg wwt		0.0131	0.0283	0.0216	0.0262	0.0157	0.0204	0.0219	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.012	0.028	0.002	0.017	
Nickel (Ni)-Total	0.040	mg/kg wwt		0.02	0.102	0.02	0.116	0.048	0.068	0.108	0.02	0.052	0.02	0.02	0.02	0.02	0.02	0.02	0.020	0.045	0.116	0.009	0.063	
Phosphorus (P)-Total	2.0	mg/kg wwt		6590	5490	5920	6000	6140	6580	6110	2320	2110	2180	2260	2690	2410	2370	2290	2110.0	4097.3	6590.0	510.5	5097.8	
Potassium (K)-Total	4.0	mg/kg wwt		3650	3200	3490	3400	3670	3540	3190	4170	4080	4040	3880	4140	4110	4020	4060	3190.0	3776.0	4170.0	89.8	3952.0	
Rubidium (Rb)-Total	0.010	mg/kg wwt		2.01	2.11	2.30	2.03	1.96	2.02	1.84	3.60	3.28	3.45	4.90	4.10	3.17	3.54	4.14	1.84	2.96	4.90	0.25	3.46	
Selenium (Se)-Total	0.010	mg/kg wwt	1.8 ⁽³⁾	0.766	0.538	0.818	0.454	0.796	0.500	0.483	0.387	0.411	0.385	0.452	0.340	0.331	0.332	0.493	0.33	0.50	0.82	0.04	0.58	
Silver (Ag)-Total	0.0010	mg/kg wwt		-	-	-	-	-	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00	0.00	0.00	0.00	NC	
Sodium (Na)-Total	4.0	mg/kg wwt		1070	904	1050	952	984	991	954	736	680	591	646	700	724	647	655	591.0	818.9	1070.0	43.9	904.9	
Strontium (Sr)-Total	0.010	mg/kg wwt		6.31	4.88	4.63	6.00	4.72	6.27	5.46	0.605	0.328	0.384	0.553	0.948	0.587	0.732	0.374	0.328	2.852	6.310	0.667	4.158	
Tellurium (Te)-Total	0.0040	mg/kg wwt		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.0020	0.0020	0.0020	0.0000	0.0020	
Thallium (Tl)-Total	0.00040	mg/kg wwt		0.00378	0.00440	0.00517	0.00708	0.00457	0.00474	0.00442	0.00197	0.00199	0.00223	0.00298	0.00313	0.00174	0.00214	0.00316	0.0017	0.0036	0.0071	0.0004	0.0043	
Tin (Sn)-Total	0.020	mg/kg wwt		0.025	0.01	0.031	0.047	0.033	0.049	0.01	0.01	0.01	0.01	0.01	0.01	0.022	0.01	0.01	0.0100	0.0198	0.0490	0.0036	0.0269	
Uranium (U)-Total	0.00040	mg/kg wwt		0.00201	0.00430	0.00245	0.00481	0.00164	0.00408	0.00597	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0018	0.0060	0.0005	0.0028	
Vanadium (V)-Total	0.020	mg/kg wwt		0.079	0.368	0.073	0.330	0.110	0.288	0.573	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.010	0.127	0.573	0.046	0.216	
Zinc (Zn)-Total	0.10	mg/kg wwt		28.7	24.2	25.7	28.3	24.3	29.2	21.9	5.20	4.97	4.27	4.97	5.43	6.81	6.24	5.40	4.3	15.0	29.2	2.8	20.5	
Zirconium (Zr)-Total	0.040	mg/kg wwt		0.045	0.064	0.02	0.068	0.02	0.058	0.076	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.020	0.034	0.076	0.006	0.045	

Notes:

SE - Standard Error

95% UCLM - 95 percent upper confidence limit of the mean

wwt - wet weight

Bold - Half the detection limit concentration

Grey highlight - Concentrations greater than the BC Tissue Guideline

(1) assumes data is normally distributed

(2) Most conservative guideline based on a high weekly consumption of fish of 1050 g. BC ENV 2001. Ambient Water Quality Guidelines for Mercury. Overview Report — First Update. Available at <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/mercury-or.pdf>

(3) Most conservative guideline based on high fish intake (0.22 kg/day). BC ENV 2014. Ambient Water Quality Guideline for Selenium - Technical Report Update. Available at https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/bc_moe_se_wqg.pdf

-" no data

NC - Not calculated

Appendix A-11: Baseline Fish Tissue Quality Data

Client Sample ID:	Lowest Detection Limit	Units	Tissue Guidelines (µg/g wwt)	WQS11-RB3	WQS11-RB4	WQS11-RB5	WQS11-RB6	WQS11-RB7	WQS11-RB8	WQS11-RB9	WQS11-RB10	WQS11-10	WQS11-11	WQS11-12	WQS11-13	WQS11-14	WQS11-15	WQS11-16	WQS11-17	WQS11				
Date Sampled:				14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	12-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	12-Oct-2017	Statistical Summary				
Time Sampled:				15:03	15:08	15:12	15:13	15:20	15:21	15:26	15:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	Minimum	Average	Maximum	SE	95% UCLM ⁽¹⁾
ALS Sample ID:				L2120822-29	L2120822-30	L2120822-31	L2120822-32	L2120822-33	L2120822-34	L2120822-35	L2120822-36	L2019410-17	L2019410-18	L2019410-19	L2019410-20	L2019410-21	L2019410-22	L2019410-23	L2019410-24					
Parameter																								
Physical Tests (Tissue)																								
% Moisture	0.50	%		78.3	78.4	78.8	78.6	77.7	77.4	78.1	75.2	77.8	79.1	76.6	78.9	78.4	79.0	77.7	78.5	75.2	78.0	79.1	0.3	78.5
Metals (Tissue)																								
Aluminum (Al)-Total	0.40	mg/kg wwt		6.57	85.9	30.3	43.1	11.7	9.60	48.0	19.8	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.42	0.2	16.1	85.9	6.1	28.1
Antimony (Sb)-Total	0.0020	mg/kg wwt		0.001	0.0028	0.001	0.0021	0.001	0.001	0.001	0.0053	0.0021	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00100	0.00152	0.00530	0.00029	0.00208
Arsenic (As)-Total	0.0040	mg/kg wwt		0.0577	0.0873	0.154	0.0658	0.106	0.0287	0.137	0.0662	0.0451	0.0409	0.0265	0.0269	0.0225	0.0230	0.0290	0.0392	0.023	0.060	0.154	0.010	0.080
Barium (Ba)-Total	0.010	mg/kg wwt		1.59	3.89	1.79	2.07	1.53	2.33	2.04	3.61	0.179	0.513	0.368	0.295	0.248	0.278	0.200	0.342	0.18	1.33	3.89	0.31	1.93
Beryllium (Be)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0010	0.0010	0.0010	0.0000	0.0010
Bismuth (Bi)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0010	0.0010	0.0010	0.0000	0.0010
Boron (B)-Total	0.20	mg/kg wwt		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1000	0.1000	0.1000	0.0000	0.1000
Cadmium (Cd)-Total	0.0010	mg/kg wwt		0.0342	0.142	0.0842	0.110	0.0312	0.0356	0.0935	0.0569	0.0035	0.0028	0.001	0.0025	0.0038	0.0036	0.001	0.0026	0.0010	0.0380	0.1420	0.0115	0.0605
Calcium (Ca)-Total	4.0	mg/kg wwt		7750	6970	7150	6420	6130	9420	6310	5760	792	981	1310	782	916	865	429	1090	429.0	3942.2	9420.0	812.7	5535.0
Cesium (Cs)-Total	0.0010	mg/kg wwt		0.0023	0.0128	0.0103	0.0085	0.0021	0.0072	0.0091	0.0128	0.0073	0.0048	0.0103	0.0066	0.0060	0.0055	0.0038	0.0060	0.0021	0.0072	0.0128	0.0008	0.0088
Chromium (Cr)-Total	0.010	mg/kg wwt		0.018	0.110	0.045	0.069	0.018	0.032	0.070	0.036	0.031	0.027	0.02	0.02	0.103	0.070	0.02	0.014	0.014	0.044	0.110	0.008	0.059
Cobalt (Co)-Total	0.0040	mg/kg wwt		0.0503	0.178	0.112	0.149	0.0411	0.0678	0.137	0.101	0.0103	0.0093	0.0066	0.0113	0.0083	0.0119	0.0086	0.0055	0.006	0.057	0.178	0.015	0.086
Copper (Cu)-Total	0.020	mg/kg wwt		0.884	1.85	1.17	1.45	1.60	1.33	1.32	1.08	0.331	0.355	0.278	0.281	0.290	0.333	0.289	0.350	0.278	0.824	1.850	0.142	1.103
Iron (Fe)-Total	0.60	mg/kg wwt		18.4	154	56.0	79.9	30.1	25.8	88.1	45.9	4.00	3.93	3.1	3.4	3.9	4.1	3.1	3.83	3.1	33.0	154.0	10.7	54.0
Lead (Pb)-Total	0.0040	mg/kg wwt		0.0153	0.0430	0.0164	0.0263	0.0059	0.0084	0.0289	0.0196	0.002	0.002	0.005	0.005	0.005	0.005	0.005	0.002	0.0020	0.0122	0.0430	0.0030	0.0180
Lithium (Li)-Total	0.10	mg/kg wwt		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.0500	0.0500	0.0500	0.0000	0.0500
Magnesium (Mg)-Total	0.40	mg/kg wwt		352	400	352	335	350	339	344	326	309	289	299	264	290	268	250	295	250.0	316.4	400.0	10.0	336.0
Manganese (Mn)-Total	0.010	mg/kg wwt		5.47	13.6	9.94	13.0	12.6	5.06	10.4	5.79	0.415	0.700	0.432	0.475	1.04	0.722	0.355	0.560	0.36	5.03	13.60	1.30	7.58
Mercury (Hg)-Total	0.0010	mg/kg wwt	0.1 ⁽²⁾	0.0341	0.0298	0.0275	0.0148	0.0210	0.0474	0.0222	0.0194	0.0197	0.0234	0.0097	0.0197	0.0143	0.0173	0.0681	0.0529	0.0097	0.0276	0.0681	0.0040	0.0353
Molybdenum (Mo)-Total	0.0040	mg/kg wwt		0.0114	0.0238	0.0141	0.0161	0.0186	0.0147	0.0172	0.0106	0.002	0.002	0.004	0.004	0.0190	0.004	0.004	0.002	0.0020	0.0105	0.0238	0.0018	0.0141
Nickel (Ni)-Total	0.040	mg/kg wwt		0.02	0.118	0.050	0.068	0.02	0.02	0.070	0.042	0.02	0.02	0.02	0.02	0.02	0.045	0.02	0.02	0.0200	0.0371	0.1180	0.0070	0.0508
Phosphorus (P)-Total	2.0	mg/kg wwt		7020	6810	6410	6160	6160	7520	5960	5680	2880	2950	2920	2410	2660	2490	2270	2800	2270.0	4568.8	7520.0	502.5	5553.6
Potassium (K)-Total	4.0	mg/kg wwt		3510	3540	3590	3320	3840	3110	3300	3600	4230	3780	4070	4100	3990	3620	3480	3510	3110.0	3661.9	4230.0	78.8	3816.4
Rubidium (Rb)-Total	0.010	mg/kg wwt		0.844	2.65	2.10	1.53	1.10	2.17	1.76	2.98	1.62	1.31	1.65	1.83	1.63	1.30	1.12	1.30	0.844	1.681	2.980	0.143	1.960
Selenium (Se)-Total	0.010	mg/kg wwt	1.8 ⁽³⁾	0.183	0.372	0.376	0.366	0.276	0.389	0.326	0.398	0.335	0.259	0.319	0.258	0.255	0.263	0.208	0.304	0.183	0.305	0.398	0.016	0.337
Silver (Ag)-Total	0.0010	mg/kg wwt		-	-	-	-	-	-	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.000	NC
Sodium (Na)-Total	4.0	mg/kg wwt		977	1130	1010	1040	1030	1080	1020	830	567	733	564	582	523	534	592	680	523.0	805.8	1130.0	57.3	918.1
Strontium (Sr)-Total	0.010	mg/kg wwt		9.70	5.70	9.03	5.43	4.78	7.26	5.22	4.53	0.704	0.911	1.17	0.734	0.897	0.778	0.378	1.06	0.378	3.643	9.700	0.802	5.215
Tellurium (Te)-Total	0.0040	mg/kg wwt		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.0020	0.0020	0.0020	0.0000	0.0020
Thallium (Tl)-Total	0.00040	mg/kg wwt		0.00302	0.00558	0.00611	0.00320	0.00136	0.00468	0.00405	0.00504	0.00171	0.00195	0.00164	0.00171	0.00208	0.00154	0.00157	0.00110	0.0011	0.0029	0.0061	0.0004	0.0037
Tin (Sn)-Total	0.020	mg/kg wwt		0.01	0.028	0.020	0.030	0.01	0.01	0.033	0.01	0.01	0.01	0.01	0.01	0.01	0.036	0.01	0.01	0.0100	0.0161	0.0360	0.0025	0.0209
Uranium (U)-Total	0.00040	mg/kg wwt		0.00131	0.00981	0.00441	0.00526	0.00163	0.00252	0.00588	0.00372	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	0.00226	0.00981	0.00071	0.00365
Vanadium (V)-Total	0.020	mg/kg wwt		0.032	0.361	0.153	0.210	0.067	0.064	0.223	0.104	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0100	0.0809	0.3610	0.0262	0.1321
Zinc (Zn)-Total	0.10	mg/kg wwt		32.6	31.7	26.2	25.0	24.6	37.1	23.8	24.2	5.80	6.11	5.39	5.63	7.14	8.03	6.06	6.27	5.4	17.2	37.1	2.9	23.0
Zirconium (Zr)-Total	0.040	mg/kg wwt		0.02	0.075	0.02	0.043	0.02	0.02	0.042	0.056	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.0200	0.0285	0.0750	0.0042	0.0367

Notes:

SE - Standard Error

95% UCLM - 95 percent upper confidence limit of the mean

wwt - wet weight

Bold - Half the detection limit concentration

Grey highlight - Concentrations greater than the BC Tissue Guideline

(1) assumes data is normally distributed

(2) Most conservative guideline based on a high weekly consumption of fish of 1050 g. BC ENV 2001. Ambient Water Quality Guidelines for Mercury. Overview Report — First Update. Available at <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/mercury-or.pdf>

(3) Most conservative guideline based on high fish intake (0.22 kg/day). BC ENV 2014. Ambient Water Quality Guideline for Selenium - Technical Report Update. Available at https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/bc_moe_se_waq.pdf

"-" no data

NC - Not calculated

Appendix A-11: Baseline Fish Tissue Quality Data

Client Sample ID:	Lowest Detection Limit	Units	Tissue Guidelines (µg/g wwt)	WQS12B-RB2	WQS12B-RB3	WQS12B-RB4	WQS12B-RB5	WQS12B-RB6	WQS12B-RB7	WQS12B-RB8	WQS12B-RB9	WQS12-6	WQS12-7	WQS12-8	WQS12-9	WQS12-10	WQS12-11	WQS12-12	WQS12-13	WQS12				
Date Sampled:				15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	14-Oct-2017	Statistical Summary				
Time Sampled:				9:35	9:42	9:56	10:01	10:25	10:28	11:03	11:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	Minimum	Average	Maximum	SE	95% UCLM ⁽¹⁾
ALS Sample ID:				L2120822-37	L2120822-38	L2120822-39	L2120822-40	L2120822-41	L2120822-42	L2120822-43	L2120822-44	L2019410-49	L2019410-50	L2019410-51	L2019410-52	L2019410-53	L2019410-54	L2019410-55	L2019410-56					
Parameter																								
Physical Tests (Tissue)																								
% Moisture	0.50	%		78.2	78.1	78.8	77.3	77.8	78.4	75.9	77.9	77.4	79.2	79.2	77.7	81.3	79.2	79.2	79.4	75.9	78.4	81.3	0.3	79.0
Metals (Tissue)																								
Aluminum (Al)-Total	0.40	mg/kg wwt		38.2	51.3	154	65.5	80.4	113	50.7	50.8	0.2	0.5	0.5	0.5	4.1	1.4	0.76	0.55	0.2	38.3	154.0	11.7	61.3
Antimony (Sb)-Total	0.0020	mg/kg wwt		0.0021	0.0027	0.0048	0.0026	0.0055	0.0046	0.0020	0.0031	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0010	0.0022	0.0055	0.0004	0.0030
Arsenic (As)-Total	0.0040	mg/kg wwt		0.0513	0.0593	0.116	0.0647	0.160	0.109	0.0732	0.0536	0.0355	0.0346	0.156	0.0714	0.0639	0.0327	0.100	0.0462	0.033	0.077	0.160	0.010	0.097
Barium (Ba)-Total	0.010	mg/kg wwt		1.18	2.12	4.52	2.84	2.91	4.36	2.05	2.68	0.176	0.301	0.430	0.182	1.24	0.436	0.148	0.146	0.146	1.607	4.520	0.376	2.345
Beryllium (Be)-Total	0.0020	mg/kg wwt		0.001	0.001	0.0031	0.001	0.001	0.0023	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0010	0.0012	0.0031	0.0001	0.0015
Bismuth (Bi)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0010	0.0010	0.0010	0.0000	0.0010
Boron (B)-Total	0.20	mg/kg wwt		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1000	0.1000	0.1000	0.0000	0.1000
Cadmium (Cd)-Total	0.0010	mg/kg wwt		0.0944	0.133	0.117	0.140	0.0957	0.0820	0.0332	0.155	0.0005	0.0033	0.001	0.001	0.0092	0.0020	0.0017	0.0035	0.001	0.055	0.155	0.015	0.084
Calcium (Ca)-Total	4.0	mg/kg wwt		6780	5140	6860	5790	5830	6030	6330	5540	677	831	987	465	1680	741	468	568	465	3420	6860	687	4766
Cesium (Cs)-Total	0.0010	mg/kg wwt		0.0089	0.0091	0.0182	0.0132	0.0103	0.0122	0.0056	0.0095	0.0081	0.0063	0.0095	0.0056	0.0103	0.0069	0.0073	0.0106	0.0056	0.0095	0.0182	0.0008	0.0110
Chromium (Cr)-Total	0.010	mg/kg wwt		0.053	0.067	0.201	0.088	0.101	0.139	0.064	0.079	0.024	0.02	0.02	0.042	0.083	0.02	0.021	0.038	0.020	0.066	0.201	0.012	0.091
Cobalt (Co)-Total	0.0040	mg/kg wwt		0.0803	0.165	0.191	0.190	0.131	0.139	0.0685	0.169	0.0061	0.0180	0.0091	0.0156	0.0646	0.0202	0.0120	0.0070	0.006	0.080	0.191	0.018	0.116
Copper (Cu)-Total	0.020	mg/kg wwt		0.966	1.58	1.41	1.74	1.07	1.17	0.938	1.55	0.378	0.206	0.216	0.325	0.257	0.205	0.360	0.326	0.205	0.794	1.740	0.142	1.072
Iron (Fe)-Total	0.60	mg/kg wwt		65.0	91.1	267	120	161	224	112	95.1	3.69	2.1	2.2	3.4	15.0	3.7	3.33	4.45	2.1	73.3	267.0	21.4	115.3
Lead (Pb)-Total	0.0040	mg/kg wwt		0.0224	0.0329	0.0560	0.0368	0.0384	0.0547	0.0271	0.0328	0.002	0.005	0.005	0.005	0.005	0.005	0.002	0.002	0.0020	0.0208	0.0560	0.0048	0.0302
Lithium (Li)-Total	0.10	mg/kg wwt		0.05	0.05	0.12	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.12	0.00	0.06
Magnesium (Mg)-Total	0.40	mg/kg wwt		338	330	388	340	343	359	361	331	297	233	265	233	241	247	270	273	233	303	388	13	328
Manganese (Mn)-Total	0.010	mg/kg wwt		7.34	17.4	17.2	13.4	8.56	16.8	18.0	13.4	0.264	0.614	1.31	0.387	1.81	0.726	0.366	0.371	0.264	7.372	18.000	1.857	11.012
Mercury (Hg)-Total	0.0010	mg/kg wwt	0.1 ⁽²⁾	0.0629	0.0184	0.0267	0.0140	0.0158	0.0145	0.0252	0.0196	0.0200	0.0189	0.0231	0.0226	0.0299	0.0173	0.0318	0.0255	0.0140	0.0241	0.0629	0.0029	0.0298
Molybdenum (Mo)-Total	0.0040	mg/kg wwt		0.0159	0.0224	0.0192	0.0154	0.0172	0.0145	0.0204	0.0172	0.002	0.004	0.004	0.004	0.004	0.004	0.002	0.002	0.0020	0.0105	0.0224	0.0019	0.0143
Nickel (Ni)-Total	0.040	mg/kg wwt		0.059	0.069	0.190	0.089	0.123	0.165	0.088	0.073	0.02	0.02	0.02	0.02	0.179	0.02	0.02	0.044	0.020	0.075	0.190	0.015	0.104
Phosphorus (P)-Total	2.0	mg/kg wwt		6100	5280	6080	5670	5440	5420	5910	5330	2730	2110	2510	2010	2590	2210	2560	2570	2010	4033	6100	425	4865
Potassium (K)-Total	4.0	mg/kg wwt		3430	3310	3090	3410	3190	3170	3590	3250	4110	3640	4000	3510	3610	3540	4160	4140	3090	3572	4160	89	3747
Rubidium (Rb)-Total	0.010	mg/kg wwt		3.05	1.73	2.27	2.35	1.65	1.49	1.13	1.78	1.40	1.44	2.61	1.55	2.71	1.79	1.72	2.26	1.13	1.93	3.05	0.14	2.20
Selenium (Se)-Total	0.010	mg/kg wwt	1.8 ⁽³⁾	0.176	0.312	0.440	0.440	0.441	0.352	0.194	0.335	0.295	0.270	0.259	0.287	0.533	0.262	0.257	0.310	0.176	0.323	0.533	0.024	0.370
Silver (Ag)-Total	0.0010	mg/kg wwt		-	-	-	-	-	-	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.000	NC
Sodium (Na)-Total	4.0	mg/kg wwt		984	938	937	961	925	899	889	941	534	568	591	580	722	541	509	516	509.0	752.2	984.0	48.7	847.7
Strontium (Sr)-Total	0.010	mg/kg wwt		5.85	4.56	7.17	4.55	4.90	5.10	6.49	4.68	0.654	0.711	1.10	0.402	1.41	0.848	0.447	0.483	0.402	3.085	7.170	0.627	4.314
Tellurium (Te)-Total	0.0040	mg/kg wwt		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.000	0.002
Thallium (Tl)-Total	0.00040	mg/kg wwt		0.00319	0.00428	0.00601	0.00417	0.00467	0.00513	0.00236	0.00430	0.00164	0.00151	0.00178	0.00187	0.00269	0.00134	0.00141	0.00161	0.001	0.003	0.006	0.000	0.004
Tin (Sn)-Total	0.020	mg/kg wwt		0.01	0.023	0.01	0.024	0.030	0.030	0.030	0.027	0.01	0.01	0.01	0.028	0.404	0.071	0.01	0.01	0.010	0.046	0.404	0.024	0.093
Uranium (U)-Total	0.00040	mg/kg wwt		0.00330	0.00566	0.0111	0.00748	0.00802	0.00950	0.00521	0.00683	0.0002	0.0002	0.0002	0.0002	0.00057	0.0002	0.0002	0.0002	0.0002	0.0037	0.0111	0.0010	0.0056
Vanadium (V)-Total	0.020	mg/kg wwt		0.155	0.217	0.635	0.290	0.420	0.505	0.235	0.239	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.010	0.174	0.635	0.051	0.273
Zinc (Zn)-Total	0.10	mg/kg wwt		20.5	24.9	23.6	21.9	23.5	20.4	20.3	26.0	5.26	6.44	5.71	6.38	9.99	6.63	5.51	4.51	4.5	14.5	26.0	2.2	18.7
Zirconium (Zr)-Total	0.040	mg/kg wwt		0.041	0.041	0.104	0.053	0.085	0.083	0.057	0.062	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.085	0.020	0.047	0.104	0.007	0.061

Notes:

SE - Standard Error

95% UCLM - 95 percent upper confidence limit of the mean

wwt - wet weight

Bold - Half the detection limit concentration

Grey highlight - Concentrations greater than the BC Tissue Guideline

(1) assumes data is normally distributed

(2) Most conservative guideline based on a high weekly consumption of fish of 1050 g. BC ENV 2001. Ambient Water Quality Guidelines for Mercury. Overview Report — First Update. Available at <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/mercury-or.pdf>

(3) Most conservative guideline based on high fish intake (0.22 kg/day). BC ENV 2014. Ambient Water Quality Guideline for Selenium - Technical Report Update. Available at https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/bc_moe_se_wqg.pdf

"-" no data

NC - Not calculated

Appendix A-11: Baseline Fish Tissue Quality Data

Client Sample ID:	Lowest Detection Limit	Units	Tissue Guidelines (µg/g wwt)	WQS08-5	WQS08-6	WQS08-7	WQS08-8	WQS08-9	WQS08-10	WQS08-11	WQS08-12	WQS08				
Date Sampled:				13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	13-Oct-2017	Statistical Summary				
Time Sampled:				0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	Minimum	Average	Maximum	SE	95% UCLM ⁽¹⁾
ALS Sample ID:				L2019410-25	L2019410-26	L2019410-27	L2019410-28	L2019410-29	L2019410-30	L2019410-31	L2019410-32					
Parameter																
Physical Tests (Tissue)																
% Moisture	0.50	%		78.9	79.2	79.5	80.1	80.1	80.9	79.3	77.6	77.6	79.5	80.9	0.3	80.1
Metals (Tissue)																
Aluminum (Al)-Total	0.40	mg/kg wwt		0.5	0.5	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	1.5	0.1	0.9
Antimony (Sb)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	NC
Arsenic (As)-Total	0.0040	mg/kg wwt		0.0109	0.0141	0.0519	0.0192	0.0171	0.0207	0.0142	0.0194	0.011	0.021	0.052	0.005	0.030
Barium (Ba)-Total	0.010	mg/kg wwt		0.672	0.296	0.248	0.153	0.518	0.192	0.245	0.178	0.153	0.313	0.672	0.065	0.441
Beryllium (Be)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	NC
Bismuth (Bi)-Total	0.0020	mg/kg wwt		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	NC
Boron (B)-Total	0.20	mg/kg wwt		0.1	0.1	0.1	0.1	0.20	0.27	0.1	0.1	0.100	0.134	0.270	0.023	0.179
Cadmium (Cd)-Total	0.0010	mg/kg wwt		0.0088	0.0035	0.0038	0.0047	0.0116	0.0037	0.0245	0.001	0.001	0.008	0.025	0.003	0.013
Calcium (Ca)-Total	4.0	mg/kg wwt		2160	905	506	373	1240	412	943	802	373.0	917.6	2160.0	206.3	1322.0
Cesium (Cs)-Total	0.0010	mg/kg wwt		0.0148	0.0179	0.0367	0.0165	0.0175	0.0152	0.0179	0.0237	0.0148	0.0200	0.0367	0.0026	0.0251
Chromium (Cr)-Total	0.010	mg/kg wwt		0.02	0.066	0.086	0.056	0.064	0.02	0.02	0.02	0.0200	0.0440	0.0860	0.0095	0.0627
Cobalt (Co)-Total	0.0040	mg/kg wwt		0.0129	0.0085	0.0184	0.0281	0.0792	0.0310	0.0376	0.0090	0.0085	0.0281	0.0792	0.0082	0.0442
Copper (Cu)-Total	0.020	mg/kg wwt		0.224	0.328	0.305	0.183	0.335	0.295	0.335	0.258	0.1830	0.2829	0.3350	0.0199	0.3219
Iron (Fe)-Total	0.60	mg/kg wwt		2.9	3.4	5.5	4.0	6.9	3.8	4.7	3.2	2.90	4.30	6.90	0.48	5.23
Lead (Pb)-Total	0.0040	mg/kg wwt		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.01	0.00	NC
Lithium (Li)-Total	0.10	mg/kg wwt		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.05
Magnesium (Mg)-Total	0.40	mg/kg wwt		255	279	261	252	260	265	241	253	241	258	279	4	266
Manganese (Mn)-Total	0.010	mg/kg wwt		1.27	0.696	0.519	0.305	1.13	0.378	0.441	0.363	0.305	0.638	1.270	0.130	0.893
Mercury (Hg)-Total	0.0010	mg/kg wwt	0.1 ⁽²⁾	0.0137	0.0212	0.0199	0.0168	0.0129	0.0194	0.0136	0.0189	0.013	0.017	0.021	0.001	0.019
Molybdenum (Mo)-Total	0.0040	mg/kg wwt		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.000	NC
Nickel (Ni)-Total	0.040	mg/kg wwt		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.020	0.020	0.020	0.000	NC
Phosphorus (P)-Total	2.0	mg/kg wwt		2940	2520	2310	2200	2630	2200	2460	2360	2200	2453	2940	88	2624
Potassium (K)-Total	4.0	mg/kg wwt		3790	3950	3950	3970	3870	3850	4090	3890	3790	3920	4090	32	3983
Rubidium (Rb)-Total	0.010	mg/kg wwt		2.54	2.62	3.02	2.73	3.63	2.36	3.76	2.96	2.36	2.95	3.76	0.18	3.30
Selenium (Se)-Total	0.010	mg/kg wwt	1.8 ⁽³⁾	0.451	0.380	0.284	0.473	0.545	0.381	0.412	0.283	0.28	0.40	0.55	0.03	0.46
Silver (Ag)-Total	0.0010	mg/kg wwt		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	NC
Sodium (Na)-Total	4.0	mg/kg wwt		548	527	544	593	713	615	693	556	527.0	598.6	713.0	24.9	647.5
Strontium (Sr)-Total	0.010	mg/kg wwt		1.73	0.682	0.368	0.266	1.23	0.361	0.808	0.825	0.266	0.784	1.730	0.176	1.128
Tellurium (Te)-Total	0.0040	mg/kg wwt		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.0020	0.0020	0.0020	0.0000	NC
Thallium (Tl)-Total	0.00040	mg/kg wwt		0.00142	0.00226	0.00258	0.00249	0.00292	0.00207	0.00209	0.00151	0.0014	0.0022	0.0029	0.0002	0.0025
Tin (Sn)-Total	0.020	mg/kg wwt		0.01	0.01	0.01	0.01	0.032	0.023	0.01	0.01	0.0100	0.0144	0.0320	0.0030	0.0202
Uranium (U)-Total	0.00040	mg/kg wwt		0.00058	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0006	0.0000	0.0003
Vanadium (V)-Total	0.020	mg/kg wwt		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0100	0.0100	0.0100	0.0000	NC
Zinc (Zn)-Total	0.10	mg/kg wwt		6.67	5.67	4.57	4.60	7.76	5.18	7.56	6.43	4.570	6.055	7.760	0.442	6.921
Zirconium (Zr)-Total	0.040	mg/kg wwt		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.020	0.020	0.020	0.000	NC

Notes:

SE - Standard Error

95% UCLM - 95 percent upper confidence limit of the mean

wwt - wet weight

Bold - Half the detection limit concentration

Grey highlight - Concentrations greater than the BC Tissue Guideline

(1) assumes data is normally distributed

(2) Most conservative guideline based on a high weekly consumption of fish of 1050 g. BC ENV 2001. Ambient Water Quality Guidelines for Mercury. Overview Report — First Update. Available at <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/mercury-or.pdf>

(3) Most conservative guideline based on high fish intake (0.22 kg/day). BC ENV 2014. Ambient Water Quality Guideline for Selenium - Technical Report Update. Available at https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/bc_moe_se_wqg.pdf

"-" no data

NC - Not calculated

Appendix A-12: Derivation of Biotransfer Factors for Contaminants of Potential Concern in Fish Tissues.

Parameter	95% UCLM Baseline Measured Fish Tissue Concentration (mg/kg ww)					Baseline Dissolved P50 Water Concentration (mg/L)					Fish Tissue Biotransfer Factors (unitless)				
	WQS02	WQS05	WQS09	WQS11	WQS12	WQS02	WQS05	WQS09	WQS11	WQS12	WQS02	WQS05	WQS09	WQS11	WQS12
Aluminum	20.2	15.3	50.3	28.1	61.3	0.0160	0.0140	0.0270	0.0170	0.0170	1262	1094	1863	1654	3605
Arsenic	0.080	0.061	0.083	0.080	0.097	0.000410	0.000170	0.000160	0.000160	0.000160	194	359	517	500	603
Barium	1.054	1.451	1.707	1.932	2.345	0.0330	0.0590	0.0340	0.0230	0.0230	32	25	50.2	84	102
Boron	0.1000	0.1000	0.1217	0.1000	0.1000	0.0130	0.00500	0.00500	0.00500	0.00500	8	20	24	20	20
Cadmium	0.019	0.039	0.055	0.061	0.084	0.00000250	0.00000810	0.00000630	0.00000250	0.00000250	7779	4826	8703	24216	33511
Chromium	0.078	0.069	0.091	0.059	0.091	0.000250	0.000100	0.0000500	0.0000500	0.0000500	311	689	1818	1183	1814
Cobalt	0.039	0.072	0.076	0.086	0.116	0.0000500	0.0000500	0.0000500	0.0000500	0.0000500	788	1434	1516	1720	2315
Iron	41.4	34.9	88.7	54.0	115.3	0.0150	0.0150	0.0760	0.0240	0.0240	2759	2330	1167	2252	4805
Lithium	0.05	0.05	0.05	0.05	0.06	0.000500	0.000500	0.000500	0.000500	0.000500	100	100	100	100	126
Manganese	4.378	2.658	6.143	7.585	11.012	0.00200	0.00260	0.00740	0.00520	0.00520	2189	1022	830	1459	2118
Mercury	0.0262	0.0232	0.0173	0.0353	0.0298	0.00000250	0.00000250	0.00000250	0.00000250	0.00000250	10476	9288	6901	14139	11928
Molybdenum	0.0101	0.0109	0.0167	0.0141	0.0143	0.000100	0.000460	0.000520	0.000370	0.000370	101	24	32	38	39
Nickel	0.035	0.040	0.063	0.051	0.104	0.000250	0.000250	0.000250	0.000250	0.000250	141	162	253	203	418
Selenium	0.705	0.436	0.583	0.337	0.370	0.0000400	0.0000760	0.0000700	0.0000250	0.0000250	Selenium Bioaccumulation Model				
Strontium	3.962	3.912	4.158	5.215	4.314	0.100	0.0770	0.0560	0.0400	0.0400	40	51	74	130	108
Thallium	0.005	0.006	0.004	0.004	0.004	0.00000500	0.00000500	0.00000500	0.00000500	0.00000500	918	1212	866	743	751
Zinc	20.8	20.8	20.5	23.0	18.7	0.00150	0.00150	0.00150	0.00130	0.00130	13837	13881	13677	17698	14388

Notes:
bold Concentration was below the method detection limit (MDL) and was adjusted to 1/2 concentration of the MDL.
ww wet weight
95% UCLM 95 Percent upper confidence limit of the mean concentration
P50 Median concentration
WQS02 Tenas Creek
WQS05 Goathorn Creek
WQS09 Telkwa River
WQS11 Bulkley River
WQS12 Bulkley River

Appendix A-13: Predicted Fish Tissue Concentrations.

Parameters	Baseline Fish Tissue COPC Concentrations*					Operations Fish Tissue COPC Concentrations*					Closure Fish Tissue COPC Concentrations*					95%UCLM Fish Tissue Concentration across			Tissue Guidelines
	Tenas Creek	Goathorn Creek	Telkwa River	Bulkley River	Bulkley River	Tenas Creek	Goathorn Creek	Telkwa River	Bulkley River	Bulkley River	Tenas Creek	Goathorn Creek	Telkwa River	Bulkley River	Bulkley River	Baseline	Operations	Closure	
	WQS02	WQS05	WQS09	WQS11	WQS12	WQS02	WQS05	WQS09	WQS11	WQS12	WQS02	WQS05	WQS09	WQS11	WQS12				ug/g ww
Aluminum	20.2	15.3	50.3	28.1	61.3	21.1	37.0	64.8	28.6	72.8	97.8	23.2	63.1	28.7	73.6	52.5	64.8	84.7	
Arsenic	0.0797	0.0611	0.0827	0.0800	0.0965	0.0833	0.244	0.124	0.0814	0.105	0.473	0.168	0.116	0.0816	0.106	0.0911	0.187	0.331	
Barium	1.05	1.45	1.71	1.93	2.35	1.10	1.31	2.25	1.97	2.77	1.29	1.33	2.26	1.97	2.80	2.12	2.48	2.49	
Boron	0.100	0.100	0.122	0.100	0.100	0.105	0.528	0.192	0.102	0.110	0.767	0.354	0.174	0.102	0.111	0.113	0.367	0.547	
Cadmium	0.0194	0.0391	0.0548	0.0605	0.0838	0.0203	0.292	0.103	0.0617	0.124	1.24	0.135	0.0804	0.0617	0.124	0.0726	0.211	0.775	
Chromium	0.0776	0.0689	0.0909	0.0592	0.0907	0.0811	0.155	0.139	0.0602	0.0998	0.174	0.121	0.131	0.0603	0.100	0.0896	0.141	0.154	
Cobalt	0.0394	0.0717	0.0758	0.0860	0.116	0.0412	1.26	0.188	0.0876	0.135	2.98	0.810	0.148	0.0877	0.138	0.102	0.794	1.92	
Iron	41.4	34.9	88.7	54.0	115	43.3	49.5	108	55.0	172	105	40.4	108	55.1	175	96.8	134	143	
Lithium	0.0500	0.0500	0.0500	0.0500	0.0629	0.0523	1.08	0.139	0.0509	0.0747	4.52	0.672	0.105	0.0510	0.0766	0.0577	0.670	2.78	
Manganese	4.38	2.66	6.14	7.58	11.0	4.58	4.65	7.65	7.72	12.7	22.7	3.32	7.58	7.74	12.8	9.16	10.4	17.3	
Mercury	0.0262	0.0232	0.0173	0.0353	0.0298	0.0251	0.0222	0.0172	0.0354	0.0299	0.0262	0.0232	0.0173	0.0353	0.0298	0.0323	0.0321	0.0323	0.5 ⁽²⁾
Molybdenum	0.0101	0.0109	0.0167	0.0141	0.0143	0.443	0.131	0.245	0.221	0.240	1.04	0.118	0.244	0.221	0.241	0.0156	0.356	0.700	
Nickel	0.0352	0.0405	0.0633	0.0508	0.104	0.0368	0.255	0.104	0.0517	0.115	0.881	0.168	0.0926	0.0518	0.116	0.0831	0.188	0.567	
Selenium	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	0.88 ⁽³⁾
Strontium	3.96	3.91	4.16	5.22	4.31	4.14	14.1	6.44	5.31	5.10	39.2	9.65	5.94	5.32	5.17	4.78	10.5	26.0	
Thallium	0.00459	0.00606	0.00433	0.00372	0.00200	0.00480	0.340	0.0232	0.00378	0.00529	1.09	0.207	0.0158	0.00379	0.00553	0.00414	0.205	0.673	
Zinc	20.8	20.8	20.5	23.0	18.7	21.7	30.2	26.8	23.4	20.8	65.6	25.1	26.4	23.5	20.9	22.1	28.0	48.7	

Notes:

All concentrations in mg/kg wet weight, except where indicated otherwise.

* Calculated as the maximum of the annual 95% UCLM water quality predictions multiplied by the fish tissue bioconcentration factor (BCF) for each COPC and site.

** 95% Upper confidence limit of the mean, calculated with alpha = 0.05, n = 5

*** Calculated based on science-based environmental benchmark (SBEB) for selenium Chapter 13. Discharge Management Plan (including selenium management) (DMP)

(2) Health Canada 2007. Human Health Risk Assessment of Mercury in Fish and Health Benefits of Fish Consumption. Bureau of Chemical Safety Food Directorate Health Products and Food Branch. Ottawa ON

(3) BC Ambient Water Quality Guideline for Selenium - 4 ug/g dry weight in muscle and whole body. Converted to ug/g ww using average moisture content of 78% across all sites and samples.